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PREHISTORY *and* HISTORY of the WINNEMUCCA DISTRICT

A Cultural Resources Literature Overview

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PREHISTORY *and* HISTORY of the WINNEMUCCA DISTRICT *A Cultural Resources Literature Overview*

Cultural Resource Series

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FORWARD

The present work is Volume 6 of the Cultural Resources Series of monographs published by the Nevada State Office of the Bureau of Land Management under the editorship of the undersigned.

The treatment of some of the subject matter of the present work is a little unusual but, we think, justifiably so. The arrangement of chapters is conventional enough, with two brief introductory chapters on the environmental setting and the ethnography respectively (Chapters I and II) followed by the meat of the work, Chapter III (prehistory) and Chapter IV (history). The very full bibliographies include much unpublished material and will be of great value to future researchers.

Chapter IV is a narrative history of the District, organized by theme, and similar in approach and contents to previous volumes in the series. It is both comprehensive in coverage and readable. A particularly useful feature is the list of abbreviated bibliographic references at the end of each section. These references key into a partially annotated bibliography, and thus provide a useful conspectus of the literature on particular subjects.

Chapter III deals with the prehistory of the District. Apart from a short introduction, it is organized by site or project, rather than by period or theme, and, in this respect, departs from the format of the other overview volumes in the series. The entries for each site or project summarize past research and recent cultural resource survey findings, and are often of considerable intrinsic interest. Moreover, like the individual sections of Chapter IV, they end with a comprehensive list of the published and unpublished literature, in addition to a list of locations where relevant artifact collections are held. Some of these lists, particularly those associated with such sites as Lovelock Cave, dug into several times and much written about but never fully or systematically published, are quite lengthy and pull together a good deal of scattered material.

We would like to express our appreciation to Jane Closson, Bernal Klob and Sue Stewart whose help has been invaluable throughout the preparation of this work, and to Jackie Peterson and Virginia McClure for the typing of the final copy. Our thanks are also extended to the many others who helped make this publication possible.

We trust that the present volume, like those already published, will have a general as well as a professional readership, and welcome it as an interesting and useful addition to the literature.

Richard C. Hanes, PhD
State Archeologist

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Nevada State Office
Bureau of Land Management
Reno

May, 1983

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PREHISTORY AND HISTORY OF THE WINNEMUCCA DISTRICT:
A CULTURAL RESOURCES LITERATURE OVERVIEW

By
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Winnemucca District
Bureau of Land Management

1983

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INTRODUCTION

This Cultural Resources Overview covers the Winnemucca District of the Bureau of Land Management, Nevada (see Maps 1 and 2). The District comprises approximately 8.5 million BLM acres in addition to about 1.5 million acres of other lands. Most of the District is high desert and mountains and the modern economy is based on livestock grazing and mining as, indeed, it has always been, from the early days of white settlement onwards.

The cultural resources of Winnemucca District represent an important part of our heritage. Preserved in place, these resources provide important data potentially useful for answering scientific questions about man's relationship to his physical environment. Equally important, they provide tangible witness to the efforts of the ancestors of the modern population to wrest a living from an often harsh and intolerant environment. For both these reasons, they are worthy of our interest and protection.

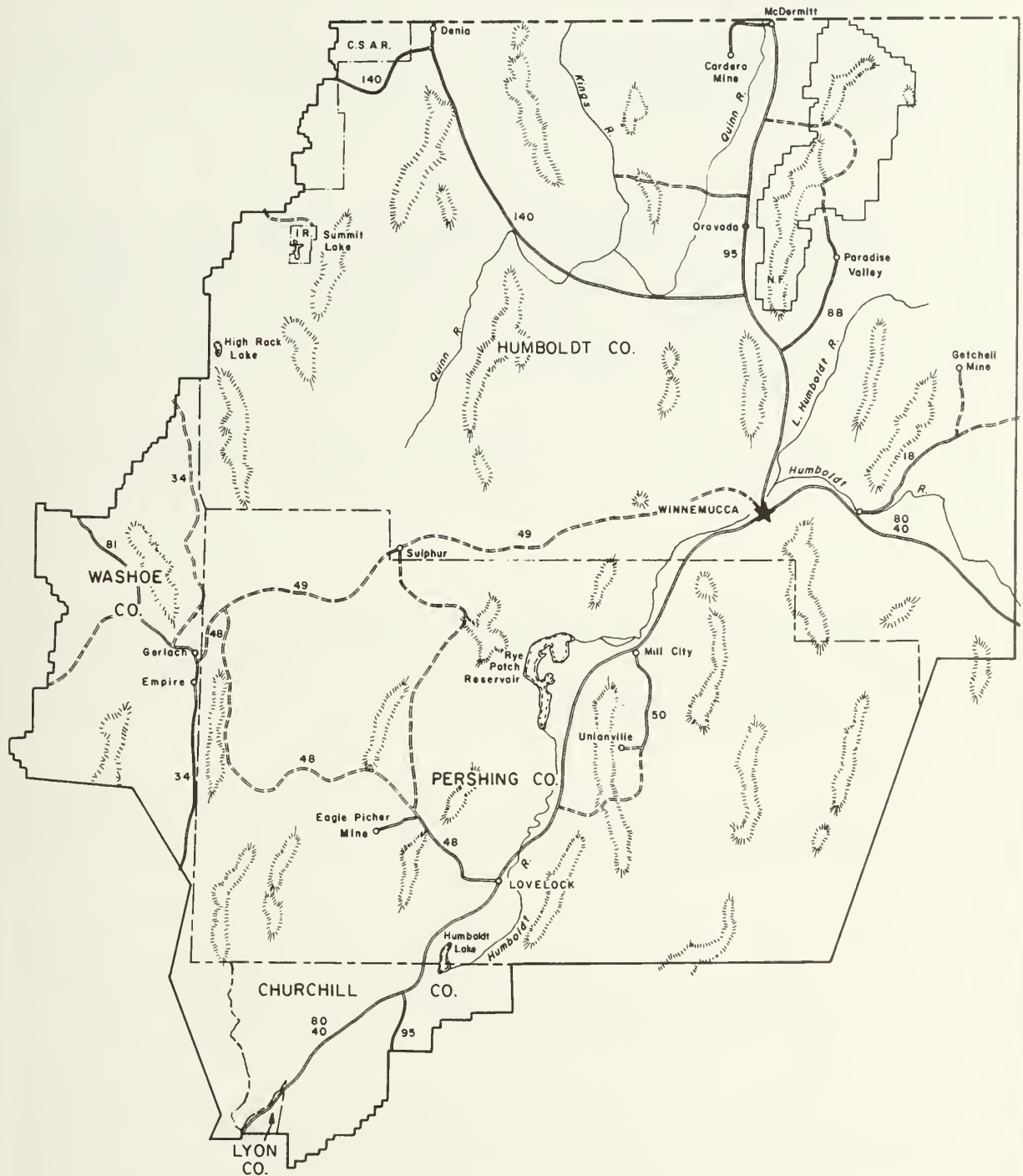
The goal of an overview is to provide a review and synthesis of existing cultural resources data. The usefulness of the present document lies in the summary it provides of previous research. As a management tool it should aid decision making and point out where future research is needed.

Staff archeologists at the BLM Winnemucca District Office prepared the overview during fiscal year 1981. Chapters I and II were written by Kathy Pedrick; Chapter III by John Roney and Regina Smith; and Chapter IV by Peggy Jones. Coordination was by Regina Smith.

Relatively little new field work was involved in the writing of this report which is largely based on unpublished site records and cultural resources reports on file at the Winnemucca District Office and on the published literature.



The Winnemucca District
Bureau of Land Management
Nevada



WINNEMUCCA DISTRICT

CHAPTER I: ENVIRONMENTAL SETTING

The Winnemucca District lies in the northwestern corner of Nevada within the Great Basin region of the western United States. The District includes most of Humboldt and Pershing Counties and parts of Churchill, Washoe and Lyon counties (Map 2).

Geology

The district lies within the Basin and Range Province which contains isolated steep, north-south trending parallel mountain ranges that are separated by gently sloping desert basins. The basins almost always represent areas of interior drainage and many are filled to great depth with alluvial debris washed down from surrounding highlands. The lowest reaches of many basins contain playa lakes; these ephemeral lakes are remnants of the more extensive lakes that existed during the later stages of the Pleistocene epoch.

The Basin and Range Province is the product of a large scale block faulting followed by extensive erosion and weathering. Large blocks of the earth's crust were either raised, tilted, or dropped to create the basins and ranges of Nevada.

Climate

The weather for the Winnemucca District may be classified as dry continental. The majority of the precipitation falls from October to June as a result of Pacific storms. There is significant diurnal and seasonal variation in temperatures, with warm days and cool nights.

Climatic Change

The climate in the Great Basin radically changed towards modern conditions in the terminal phases of the Pleistocene. Mehringer (1977) sums up these changes:

During the last pluvial many basins, now dry and salt encrusted, were fed to overflowing by cool waters and joined by great rivers. As woodlands descended to the treeless deserts, glaciers carved beds in the snow capped mountains. Herds of camels, horses and mammoths grazed the steppes and fertile marshes. And then, within 2,000 years (12,000-10,000 B.P.) lakes shrank, rivers ceased to flow, and springs began to dry. Plants and animals began the long retreat northward to higher elevations and man witnessed the demise of the Pleistocene megafauna. By comparison, all subsequent environmental changes have been minor.

A trend toward aridity prevailed for the next few thousand years. As the lakes grew even smaller and spring discharged decreased with

the dwindling supply of pluvial age ground water, both plants and animals continued to adjust their ranges. Short term reversals of this trend probably occurred shortly before 10,000 and 8,000 B.P. By 7,500 radiocarbon years ago conditions were much like the present. Some researchers have suggested the persistence of extreme arid climates, hotter and drier than the present, for the next 3,000 years. Perhaps this view is oversimplified as there is some evidence for a brief increase in effective moisture sometime between 6,500-5,500 radiocarbon years ago. This includes plant remains from cave deposits and pollen from lakes and bogs of northwestern Utah. The pollen records from O'Malley shelter and Osgood swamp also show changes at this time, and it is a time of peat growth in the spring-fed marshes of the Amargosa Desert. Considerably more data are required to establish the detailed chronology and magnitude of Great Basin climate change from 7,500-4,000 B.P. As for the rest of post-pluvial time, the influence of climatic change on man is best considered in terms of evidence for its effect on local resources.

Vegetation

The vegetation of the District is characteristic of the "cool desert biome." The three major plant forms are annuals (forbs and grasses), perennial grasses and desert shrubs.

The vegetation in the Great Basin has been classified by Cronquist et al, (1972 p. 115). The zones applicable to the District are described below.

1. Shadscale Zone. This zone occurs in valley bottoms in somewhat saline soils. The plants are "typically dominated by low, widely-spaced, more or less spiny, grayish, small-leaved shrubs which cover only about ten percent of the ground area" (Cronquist et al. 1972;115). The major species found in this zone is shadscale (Atriplex confertifolia).
2. Sagebrush Zone. Higher than the Shadscale Zone, the Sagebrush Zone occurs where there is more precipitation, usually above 5,000 feet, although it occurs in broad valleys and foothills in the northern part of the region. Big Sagebrush (Artemisia tridentata) is the dominant plant.
3. Pinyon-Juniper Zone. The plants of this zone grow between 5,000 to 8,000 feet and where the precipitation exceeds 12 inches (Cronquist et al. 1972). Both pinyon and juniper are found only in the southern part of the District, with juniper extending further north than pinyon.
4. Basin Range Upper Sagebrush-Grass Zone. This zone occurs in the dry mountain ranges between 7,500 and 10,000 feet. Important tree species are mountain mahogany and aspen.

5. Limber Pine - Bristlecone Pine Zone. The Pine Forest Range in the northwestern part of the District contains the only area of limber pine and whitebark pine in the District. This zone generally occurs between 9,500 and 10,500 feet.

Hydrology

The major drainage system in the District is the Humboldt River which drains much of the District and terminates in the Humboldt Sink. Another important waterway is the Quinn River which drains into the Black Rock Desert. Numerous springs exist throughout the area. Various peripheral waters drain into major systems located outside the District.

CHAPTER II: ETHNOGRAPHIC OVERVIEW

The Winnemucca District was occupied in the late prehistoric period by two distinct groups, the Northern Paiutes (also known as the Paviotso) and the Western Shoshone who lived in the extreme eastern portion of the District. The boundary between these two groups has been disputed. The accounts of early explorers and ethnographers do not make explicit the areas where each group lived, but existing information puts the line roughly from the Golconda-Iron Point area north to the Idaho-Oregon border and south along the Tobin Range (Steward and Wheeler-Voegelin 1974). The two groups were culturally similar and will be treated as such in this discussion. Inter-marriage occurred freely between the two groups and there is little evidence of hostility.

Major ethnographical work was conducted in the area during the 1930's by the University of California and other institutions. At that time the University of California was conducting its Culture Element Surveys in the western United States. The Northern Paiutes were studied by Omer C. Stewart (1941) and the Western Shoshone were studied by Julian H. Steward (1941). Other work done during this period included that of Williard Z. Park of Yale University who studied the Paviotso from 1933 through 1935 (Fowler 1980; Park 1938).

In 1875 Stephen Powers recorded some of the first ethnographic information on the Northern Paiutes for the 1876 Philadelphia Exposition. Julian Steward and Erminie Wheeler-Voegelin wrote about the Northern Paiute in the 1950's for the U.S. Justice Department's Indian Claims Commission (1974). Their work ties together much of the earlier findings of both Stewart (1939) and Steward (1938).

The Northern Paiute

Omer C. Stewart (1939) identified ten Northern Paiute "bands" in the Winnemucca District (see Map 3):

1. Aga' ipaninadokado (fish lake eaters).

The territory of this group included the Summit Lake area. The boundary extended from Disaster Peak to the Oregon-Nevada border and south to the Black Rock Desert. Summit Lake was the major body of water in the area and would have maintained a good percentage of the population.

2. Atsakudokwa tuviwarai (red butte dwellers).

This group lived around McDermitt, Nevada. The boundary extended from the Nevada-Oregon border southwest along the crest of the Santa Rosa Mountains, west to the Jackson Mountains and northeast to Disaster Peak. The Quinn River was the major water resource for this group.

3. Yamosopo tuviwarai (half-moon valley dwellers).

The group of Paradise Valley, Nevada. The area contains the Little Humboldt drainage between the Santa Rosa Mountain Range and from the Oregon-Nevada border south through the Osgood Mountains.

4. Makuhadokado (meaning unknown).

This group bordered the Western Shoshone and intermarried freely with them. Its territory included the Humboldt, Buena Vista, Pleasant and Buffalo valleys and the Sonoma and East ranges.

5. Sawawaktodo tuviwarai (sagebrush mountain dwellers).

This group lived in the Winnemucca area. Its territory ranged from the Osgood Mountains and the Sonoma Mountains on the east to the Jackson Mountains on the west. The Slumbering Hills and the Santa Rosa Mountains formed the boundary on the north and Table Mountain on the south.

6. Kamodokado (jackrabbit eaters).

This group centered around Gerlach, Nevada. Its territory included the Smoke Creek and the Granite Creek deserts.

7. Tasiget tuviwarai (between dwellers).

This group lived in the Winnemucca Valley area. Only a small portion of Winnemucca Valley is in the Winnemucca District.

8. Kuyuidokado (Kuyui, black sucker eaters).

This group was centered on Pyramid Lake in a territory extending from Gerlach south to Fernley.

9. Kupadokado (ground squirrel eaters).

This group lived in the area along Humboldt Lake and bounded the Shoshone on the east. The area covered the Pahsupp, Kamma, and Majuba mountains to the Humboldt River and Sink.

10. Toedokado (tule eaters).

The territory of this group included Job's Peak which is the mythical center of the Northern Paiute creation near Stillwater, Nevada. Fort Churchill disrupted the aboriginal settlement patterns very soon after white contact and the boundaries of this group are unclear.

Population figures for the Northern Paiute in the Winnemucca District area are approximately 7-10,000 based on the accounts of the early explorers and travelers.

From STEWART, Omer C. "CULTURE ELEMENT DISTRIBUTIONS: XIV NORTHERN PAIUTE", Anthropological Records 4:3, Univ. of Calif., Berkeley, 1941; and STEWART, Omer C. "THE NORTHERN PAIUTE BANDS," Anthropological Records 2:3, Univ. of Calif., Berkeley, 1939

The Western Shoshone

The part of the District which was occupied by the Western Shoshone was discussed in detail by Julian H. Steward (1938) in his Basin-Plateau Aboriginal Socio-Political Groups. Steward states in his discussion of the Northern Paiute that they were culturally the same as the Western Shoshone which he dealt with in the Plateau book. For this overview Steward's premise that the major difference between the two groups was language is accepted.

A basic problem with a discussion of the ethnography of this area is the rapid cultural change which the aboriginal populations underwent at and just before white contact. Some disruption of traditional lifeways occurred in the late 18th century when the Humboldt River started being visited on a periodic basis by mounted bands of California and Columbia Plateau Indians. Subsequently, with the arrival of white travellers and settlers in the mid 19th century, further and more serious disruption took place as seeds and other native foods were destroyed by the overgrazing of introduced livestock.

SUBSISTENCE AND SETTLEMENT

The aboriginal populations in the Winnemucca District were hunting-gathering bands heavily dependent on annual seed production. People came together temporarily and there were no permanent villages. The food resources in the District area are scarce and the population density was extremely low. A few families roamed together moving through a seasonal round.

The basic food resources utilized by the Northern Paiute were grass seeds, roots, insects, and small game. Game included rabbit, antelope, deer, ground squirrels, rodents, and reptiles. Along the Humboldt River, the basic plant food diet was supplemented by the harvesting of fish on a seasonal basis. The Northern Paiutes had no adequate means of preserving stored fish for extended periods of time. Weirs and nets were the most common methods of catching fish. The Stillwater Range in the southeastern portion of the District was occupied by the Western Shoshone who exploited the seeds of the pinyon groves each fall.

Communal antelope and rabbit hunts were conducted occasionally with the participants varying the time and place. The hunts were said to have lasted no longer than two weeks (Steward and Wheeler-Voegelin 1974).

This rabbit hunt is likewise under the direction of a special manager Usually the Paviotso of Wadsworth, Walker River, and other localities are invited to participate. The visitors stay with the Fallon people as long as the hunt lasts--say 10 or 15 days--then return home after drying the meat. November is the proper time . . . no general distribution of the spoils; everyone takes his own kill and saves the hides therefrom (Steward and Voegelin 1974:32).

Game was less important than plant foods. . . . The general aridity of this region restricted the numbers of all species of large game and the limited grasslands largely precluded species which occur in great herds. (The infrequency of taking large game is attested by the great premium upon skins. Persons fully clad in shirts and leggings or dresses were rare.) Because of the secondary importance of game, the annual migration for foods was directed with reference to plant rather than animal species (Steward 1938:33).

No permanent villages were established in the area of the Winnemucca District as the scarcity of food resources kept the people dispersed into small family units. Larger groups could not collect enough food in one area to support everyone. During the winter months (3-4 months) small groups in an area would come together to camp near a permanent water source, such as the Humboldt River, and subsisted mostly on stored roots and seeds gathered from the early spring through the late summer, and fish which were caught during their stay (Steward and Wheeler-Voegelin 1974).

The southern portion of the District around Humboldt Lake supported a lacustrine-oriented economy which was not possible in the northern portions of the District. Recent archaeological excavations at caves in the area, such as Lovelock Cave, revealed materials for exploitation of lake resources such as waterfowl decoys, nets, bow and arrows (Napton 1970).

SOCIAL, POLITICAL, AND RELIGIOUS ORGANIZATIONS

Social Organizations

In the following paragraph, Steward summarizes the basic socioeconomic unit of the Northern Paiute-Western Shoshone:

Owing to the nature of the natural environment of the Great Basin area and to the simple hunting and gathering techniques for exploiting it, it was inevitable that the individual family or at the most two of three related families should live in isolation during most of the year. Family in this case signifies the nuclear, biological, or bilateral family, consisting of mother, father, and children (Steward 1955 and cited in Fowler 1966).

Fowler (1966) and Malouf (1966) present the kin-clique relationship as the major social unit rather than the strict nuclear family. Fowler (1966) states: "A better interpretation would be to say that a nuclear family was the focal point or core of a group of related persons the totality of which compromised the normal 'socio-economic unit.'" The family units came together for communal hunts or small gatherings at winter camps. The members of these groups varied seasonally depending on who was in an area at that particular time.

The two major scholars for the group, Julian H. Steward and Omer C. Stewart, expressed distinct differences of opinion over the Northern Paiute social structure.

Omer C. Stewart (1939) proposed that bands existed within the Northern Paiute while Julian H. Steward (1941, 1974) maintains that bands did not develop until the post-white period with the introduction of the horse to the area. The horse changed the social structure of the inhabitants since they were able to group together in large numbers due to the mobility which the horse permitted.

Stewart (1939), who compiled the Culture Element list for the Northern Paiute, defined 21 band divisions within the Northern Paiute areas. These band divisions are accepted today but with reservations about their true significance (cf., Steward and Wheeler-Voegelin (1974)).

Current opinion has combined elements from both scholars. The band names identified by Stewart are accepted with the approximate boundaries given (see Map 3) while Steward's concept of the "mixed groups" is also considered valid. Steward (1974) thinks the band names refer to food areas. When an individual lived in one food-name area he was known by that name and if he moved to another area his band name identity changed accordingly. True band or tribe organization did not develop until the post-white period.

A sexual division of labor existed based on economic activities. Men performed all hunting related activities with the exception of the communal hunts in which everyone participated. Women did most of the gathering and food preparation, although men did perform these tasks at times (Lohse n.d.). Dwellings were constructed as a joint effort.

Marriage was the most important social factor in Northern Paiute-Western Shoshone life. Accepting Steward's premise, the family was the economic unit and all subsistence functions were carried out by it. Sororate polygamy (marriage of two or more sisters by the same man) and levirate (compulsory marriage of a widow by her husband's brother) were known for the Northern Paiute (Fowler 1966). Divorce was common but the parties usually remarried again due to the economic necessity of marriage ties (Steward 1938).

Downs (1966) summarizes the social situation best:

The freedom of the small social unit to make its own decisions within the limitations of Basin environment, and the freedom of individuals to shift from group to group and choose their own alternatives without reference to even the smallest of units is, I feel, one of the most significant social facts of Basin life.

Political Organizations

Prehistorically the Northern Paiute-Western Shoshone had little, if any, political unity. The dispersed population, due to the dispersed nature of the food resources, did not facilitate the development of a true political structure. A certain individual might have a leadership role during a special activity. For example, there was a leader of the communal hunts. These leaders often had a religious/shamanistic function as well (Steward and Wheeler-Voegelin 1974).

After white contact a need was created for permanent or semi-permanent "chiefs" able to represent the local population as a whole in its dealings with the interlopers. Chief Winnemucca fell into this category. He rose to his historic position as a leader when the military began negotiating with the various bands. Chiefs in post-white bands were military leaders rather than economic leaders (Steward and Wheeler-Voegelin 1974). Steward and Wheeler-Voegelin state:

The Indians themselves use the rather apt word 'boss' for persons in charge of the different activities in pre-white times. 'Dance boss' and 'rabbit boss,' for example, implied merely temporary authority over a small group from which members were free to withdraw at any time. The post-white 'chiefs' of peace and war factions would be better designated as 'leaders', since their authority was in no way rooted in aboriginal culture, but depended entirely upon their personal ability to attract temporary followers to their own way of dealing with the whites (Steward and Wheeler-Voegelin 1974).

Religious Organizations

The main religious figure was the shaman who was responsible for curing sickness. The Northern Paiutes and Western Shoshone believed in spirits and the shaman was the liaison. Specific shamans performed duties during collective hunts. The shaman 'charmed' the antelope or other game into the traps (Steward and Wheeler-Voegelin 1974). Occasionally, a ritual dance was performed but there was no specific schedule for this. The scattered family units did not permit a more structured religious organization to develop.

LINGUISTICS

Linguistically the Winnemucca District area contains two sub-branches of the Numic Branch of the Northern Uto-Aztecan Language Family (Whistler 1981). The Northern Paiute spoke various dialects and sub-dialects of Western Numic while the Western Shoshone spoke a form of Central Numic (see Table 1).

The three separate sub-branches of Numic--Northern, Central and Southern--are thought to have evolved from a proto-language spoken in the Owens Valley area of southeast California. The eastern spread of Numic speakers from this supposed California motherland is thought by some authorities to have been comparatively recent and their arrival in the Winnemucca District to have been no earlier than 1200 B.P. (see Map 4).

MATERIAL CULTURE

The following information on material culture is derived entirely from Omer C. Stewart's Culture Element Distributions XIV -The Northern Paiutes (1941).

TABLE 1

A CONCORDANCE OF CLASSIFICATIONS OF THE NORTHERN UTAZTKAN LANGUAGE FAMILIES

Kroeber (1907)	Lamb (1958)	Miller (1966)	Goss (1968)
SHOSHONEAN	UTO-AZTECAN	UTO-AZTECAN	SHOSHONEAN
I. <u>Plateau Shoshonean</u>	<u>Numic</u>	<u>Numic</u>	<u>Numic Family</u>
1. Mono-Paviotso	Monachi-Paviotso	Western Numic	Monoish Genus
2. Shoshone-Comanche	Panamint-Shoshone	Central Numic	Shoshonish Genus
3. Ute-Chemehuevi	Kawaiisu-Ute	Southern Numic	Yutish Genus
II. <u>Kern River Shoshonean</u>	<u>Tubatulabalic</u>	<u>Tubatulabal</u>	<u>Tubatulabalic Family</u>
III. <u>Southern California Shoshonean</u>	<u>Luisenic</u>	<u>Takic</u>	<u>Luisenic Family</u>
IV. <u>Pueblo Shoshonean</u>	<u>Hopic</u>	<u>Hopi</u>	<u>Hopic Family</u>

from Goss, 1977.

Hunting implements produced by the Northern Paiute and the Western Shoshone were predominantly made from stone and plant products. Bows and arrows as well as clubs and brush traps were used for hunting. Lithic technology played an important role in prehistoric times. In addition to projectile points (Cottonwood and Desert Side-Notched), stone tools included hide scrapers and knives.

Fishing also required a specialized tool kit, including nets, weirs, harpoons, and hooks. Fish were also obtained by driving them into shallows and beating them with clubs. Boats and rafts were made from tule in the southern portion of the District for exploitation of lakeside resources.

The gathering and preparation of plant foods also required specific artifacts. Sickles were employed for cutting grain and seed beaters and conical seed carrying baskets were also used. Seed and other baskets were made from willow and tule, and were usually twined rather than coiled. Digging sticks were used for obtaining edible roots.

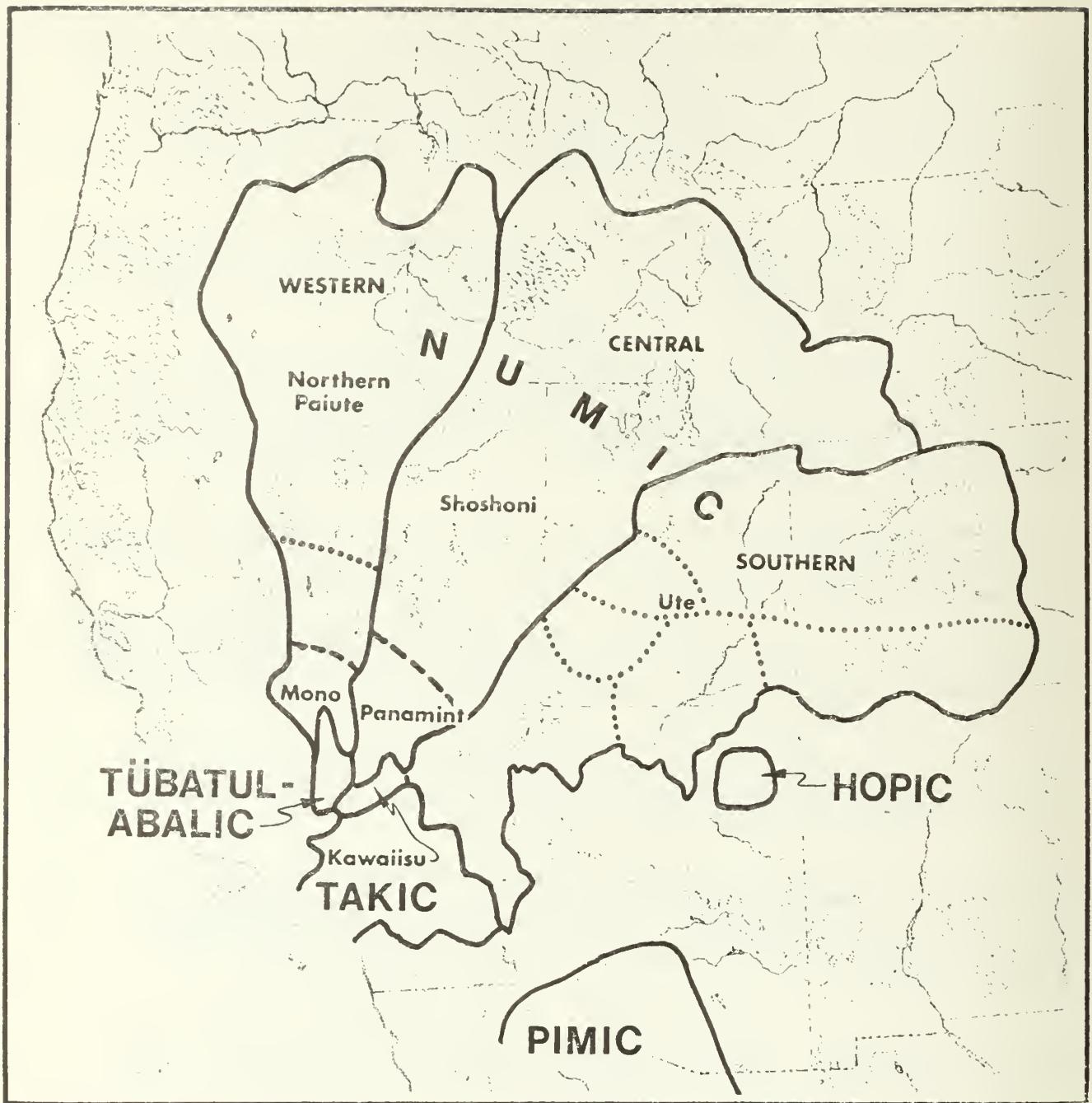
In the southeastern area where the pinyon stands exist, implements for obtaining the pinyon nuts were used. Long hooks knocked the cones from the trees and pitch was removed by roasting the cones in special baskets.

Mortars and pestles were commonly used for pulverizing seeds and nuts. The mano and metate was also used for this purpose. Food was cooked by placing it with small heated stones in a basket container. Fish and meat were dried in the sun or were hung in trees.

Clothing was made from animal skins, mainly deer. Footwear was often not used but both hide and fiber moccasins and sandals were manufactured. Blankets were made by sewing together rabbit skins.

Dwellings were circular brush wickiups consisted of a domed framework of willow branches covered with layers of tule, brush and/or grasses. The floors were covered with grass. Wheat (1967) photographically documents the construction of an aboriginal shelter in her Survival Arts of the Primitive Paiutes.

Non-subsistence items included musical instruments such as rattles, flutes, drums, and whistles. Gaming pieces were also used by the Northern Paiute.



Linguistic Distributions: Numic, Tubatulabal, Hopic, Takic, Pimic

From Fowler, 1972.

CHAPTER III: PREHISTORY

CHRONOLOGY AND SETTING

Several authors have proposed cultural sequences for the Great Basin generally, e.g. Hester (1973). Local sequences, based on sites in the Winnemucca District, have also been proposed, notably by Layton, (1970), for the High Rock/Black Rock Desert area, and by Grosscup (1958) and Bard et al (1981), for the Humboldt and Carson sinks. Hester's general sequence and the two local sequences are presented in Table 2.

Twelve thousand years ago cool, moist climatic conditions prevailed over much of North America and the Great Basin. This was the beginning of the climatic phase called the Anathermal (Antevs 1955: Table 2 *infra*). Pluvial Lake Lahontan reached its final maximum stand and by sometime around 10,000 and 12,000 years ago it is believed man had entered the Great Basin. The subsistence pattern of these earliest inhabitants is unclear. The view of some prehistorians (Tuohy 1968; Cressman 1966), that the earliest inhabitants were big game hunters, is questioned by others (Heizer and Baumhoff 1970; Hester 1973:62) who point to the absence of unequivocal evidence for the association of man and extinct fauna.

Occasional fluted points, which are typologically identical to Clovis Points, have been found as surface finds, some in apparent association with tools of the Western Pluvial Lakes Tradition, representing the earliest generally accepted occupation in the Winnemucca District. The interpretation of the fluted points is problematical, since no clear association between Pleistocene megafauna and cultural material has been documented for this area.

The Western Pluvial Tradition is representative of a specialized hunting culture oriented towards the grasslands and marshes which replaced the Pleistocene lakes as Lake Lahontan began to recede. This occupation occurred about 9,000 to 6,000 B.C. and the evidence for it within the District is confined almost exclusively to the margins of the Black Rock Desert, Carson Sink and Pluvial Lake Parmen at Fivemile Flats.

Desiccation continued and by 5,000 B.C. the Altithermal climatic period had begun. The Altithermal was a period of extreme desiccation and it is believed that human occupation of the area was minimal and possibly nonexistent in some places (Fagan 1974). Since there is a continuity of projectile point styles, repopulation at about 4,500 B.P. was probably by the same culture groups, generally known as Great Basin Archaic.

Subsistence during the Great Basin Archaic was by means of various regional adaptations involving desert, lacustrine and mountain resources. The lacustrine subsistence pattern is probably the best documented in the south and west parts of the District. Local representatives include Leonard and Lovelock Cultures in the Humboldt Sink, the Hidden and Carson Phases in the Carson Sink, and the Lovelock Culture and Lake Shore Ecology Phase by Pyramid and Winnemucca Lakes.

Table 2

CULTURAL SEQUENCES FOR THE WINNEMUCCA DISTRICT

Western Nevada Sequence (Hester, 1973: 128)		High Rock Sequence (Layton, 1970)	Lovelock Sequence (Grosscup 1958; Bard et al. 1981)	Climatic Sequence (Antevs 1948)	
PRESENT	Historic	Last Supper Phase	Humboldt Sink	Medithermal	
AD1840	Late Prehistoric	Hanging Rock Phase	Late Prehistoric		
AD1300					
AD1000	Rose Spring/Eastgate	Late Smoky Creek Phase	Rose Spring/Eastgate		
AD500	Great Basin Archaic	Early Smoky Creek Phase	Lovelock Culture		
0					
1000 BC		Silent Snake Phase	Leonard Culture	Altithermal	
2000 BC					
3000 BC					
4000 BC					
5000 BC		(Abandonment)	Humboldt Culture	Anathermal	
6000 BC		Calico Phase			
7000 BC		Western Pluvial Lakes Tradition	Parman Phase		?
8000 BC		Fluted Point Tradition	Earliest Times?		
9000 BC					
10000 BC					

In the High Rock Country the Altithermal abandonment was comparatively brief. The Calico Phase occurred during the very dry period immediately before abandonment. Reoccupation took place during the Silent Snake Phase which was followed by the Early Smoky Creek Phase.

The desiccation of the lakes forced the High Rock population to use upland resources for the first time and mountain sheep became a major food source. The milling stone first became prominent during the reoccupation and is an indication of increased reliance on seeds as an important food.

Thus, we see the increasingly generalized Great Basin Archaic adaptation evolving to counteract harsh environmental conditions. By relying on a wide range of resources, chances of survival were increased. There was no longer a single critical resource base and, if one source of food failed, people had both the knowledge and technology to resort to other sources.

At about 1,500 B.C., the long period of aridity came to a close and Mediterranean climatic conditions, approximately those which prevail today, were established (Layton 1970). Shallow lakes reappeared in many basins (Morrison 1965). With the advent of more favorable environmental conditions, population appears to have increased dramatically, and Early Smoky Creek Phase sites are very common in the High Rock Country.

At about 1,500 B.C., snares probably come into use for the first time, causing a shift from hunting of artiodactyls to intensive exploitation of rodents and other small mammals. Environmental conditions appear to have deteriorated again at about A.D. 200. The effect upon expanded human populations was severe and occupation became sparse once more.

The introduction of the bow and arrow at about A.D. 500 is a convenient boundary between the Great Basin Archaic and the Rose Spring/Eastgate Period. Arrow points are smaller and lighter than dart points (used with the atlatl or spear-thrower) and are easily distinguished in most cases. In the north, the Rose Spring/Eastgate Period is represented by the Late Smoky Creek Phase and in the south, Painted Cave was occupied at about this time (Bard, Busby, and Kobori 1978).

The Late Prehistoric period began at about A.D. 1,000 when the Paiute and Shoshone began filtering into the Great Basin from southeastern California, reaching the Winnemucca District around A.D. 1,300 and introducing the smallest of projectile points, the Desert Side Notch and Cottonwood Series.

The only named local representative is the Hanging Rock phase in the High Rock Country.

Information about the Northern Paiute who occupied the Winnemucca District at the time of first Caucasian contact is largely extrapolated from other areas (Layton 1970: Stewart 1939, 1941; Kelley 1932). Resources in this area are diffuse, a circumstance which prohibited extended population aggregation. Consequently, during most of the year individual families were scattered throughout the countryside, roaming widely, gathering food where they found it, and having only infrequent contact with other families (Steward 1938). In the fall, several families might meet at a pre-arranged

location for a communal game drive. Communal game drives were the only occasions involving large numbers of people and requiring organized leadership. Important social and possibly religious functions took place at these times. During the winter little food was available and the Paiute were forced to rely on stocks gathered and stored in other seasons. Because edible resources were effectively absent during this season, their diffuse distribution was no longer a significant factor in determining settlement patterns. Most families established a permanent winter camp, and often several families camped in the same general area during the winter.

In the Carson and Humboldt Sinks this austere lifestyle was replaced by a lacustrine subsistence pattern characterized by a semi-sedentary occupation of lakeside villages and intermittent occupation and use of lakeside caves (Napton 1969b:28-29). The lakeside occupation was closely tied to the use of lacustrine foods and specialized artifacts for the efficient exploitation of these resources, such as boats or rafts, nets and waterfowl decoys. Specialized food processing included parching seeds on mats or trays and mud hens and other waterfowl were obtained by means of communal drives in tule rafts.

Archeological finds indicate that this subsistence pattern may have existed in the area for the last 3000 years.

Historic aboriginal occupation in the High Rock Country is known as the Last Supper Phase, and apparently lasted until at least the 1920s. For further information on the contact period, see Chapter IV.

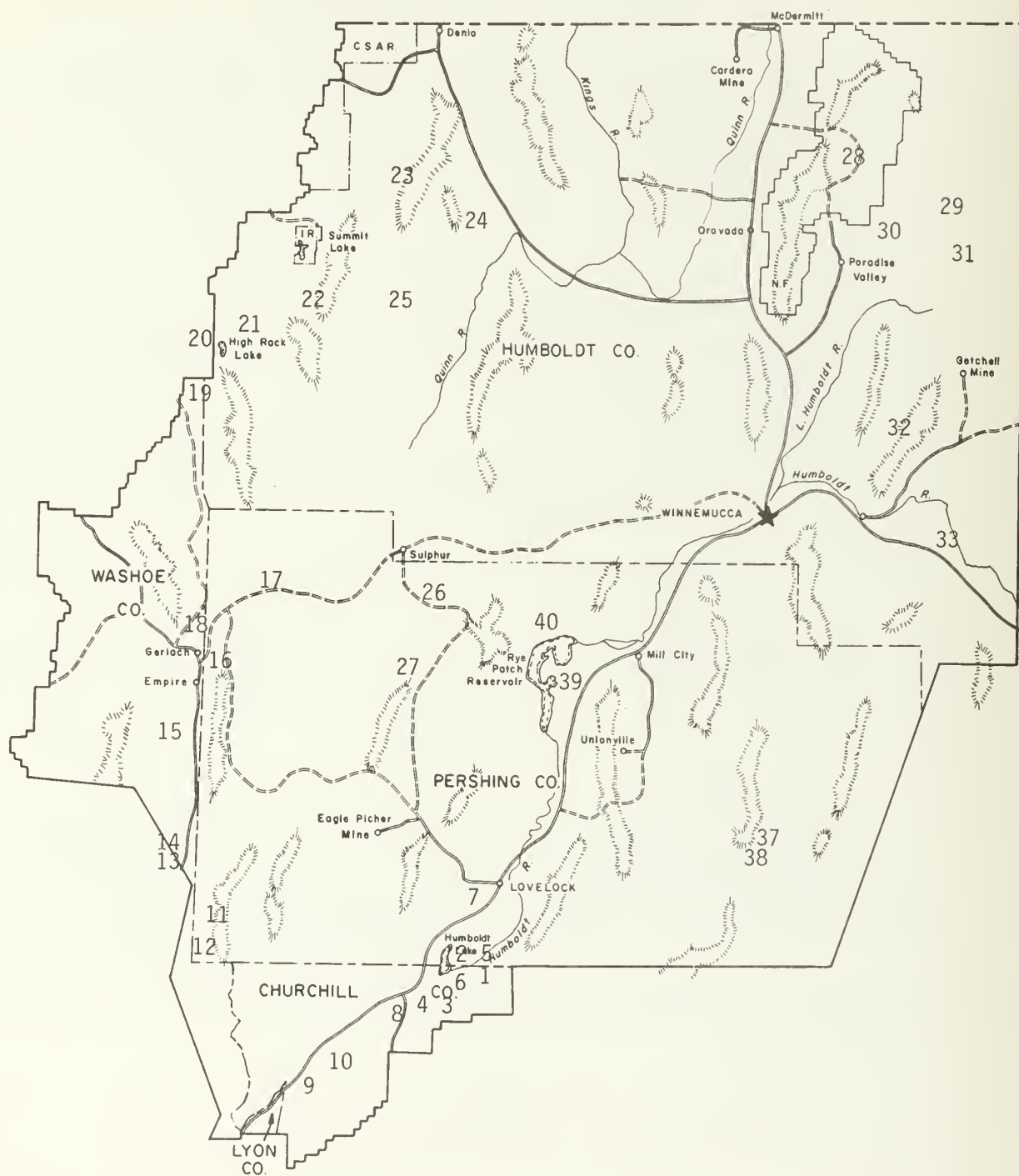
PREVIOUS RESEARCH

Previous archeological research on the prehistory of the District will be treated in the following pages on a site by site or area by area basis. This approach has the advantage, both for research and management purposes, of bringing together in one place all the relevant information about particular sites or areas. In keeping with these purposes, each entry is followed by a list of the principal bibliographic references.

The individual descriptions follow, preceded by a distribution map (Map 5).

BREAKDOWN OF RESEARCH LOCALITIES

1. Lovelock Cave
2. Humboldt Lake-bed Sites
3. Ocala Cave
4. Humboldt Cave
5. Leonard Rockshelter
6. 26Pe8
7. Granite Point
8. The Concanour Locality
9. Northern Churchill County - Early Man Materials
10. Inventories in the Northern Carson Desert/Hot Spring Mountain Area
11. Winnemucca Lake Caves
12. Winnemucca Lake Area
13. Coleman Locality
14. Falcon Hill Sites
15. San Emidio Desert and Area South of Gerlach
16. Inventories in the Western Black Rock Desert
17. 26Pe118, Trego Hot Springs
18. Granite Creek
19. Northwest Nevada Project
20. 26Wa177, High Rock Canyon
21. High Rock Country
22. Black Rock Range
23. Pine Forest Range
24. Dyke Hot Springs
25. Eastern Arm of the Black Rock Desert
26. Barrel Springs
27. Seven Troughs Range
28. Humboldt National Forest
29. Twin Valley Spring
30. William Stock Exchange
31. North Fork of the Little Humboldt River
32. Winnemucca-Battle Mountain Area Reconnaissance
33. Valmy Power Plant
34. Sierra Pacific Power Company, Valmy to Mira Loma Transmission Lines
35. Northern Nevada Natural Gas Pipeline
36. University of California - Rock Art Survey
37. Painted Cave
38. Sou Hot Springs
39. Inventories Along the Humboldt River
40. The Humboldt Project, Rye Patch Reservoir



WINNEMUCCA DISTRICT

Research Localities

Not Shown: #34

#35

#36

1. Lovelock Cave

History of Research

In 1911 guano miners removed about 250 tons of bat guano from Lovelock Cave (Loud and Harrington 1929:vii). In the course of this work Indian artifacts were found and brought to the attention of the Nevada Historical Society and the University of California, Berkeley (Heizer and Napton 1970c). A.L. Kroeber of the Museum of Anthropology, University of California, sent L.L. Loud, a museum guard with no formal training in archeology to investigate the site. Loud worked at Lovelock Cave in 1912, collecting approximately 10,000 archeological specimens. In 1924, Loud returned to Lovelock Cave with M.R. Harrington of the Museum of the American Indian, Heye Foundation, who conducted stratigraphic excavations. Loud and Harrington's joint report (1929) defined the basic stratigraphy and cultural sequence and provided detailed descriptions of many of the Lovelock Cave artifacts.

After 1924, Lovelock Cave was visited only occasionally by professional archeologists. In 1936 Nels Nelson, American Museum of Natural History, made a small surface collection from relic hunters' backdirt. Also in 1936 R.F. Heizer, A. Krieger, and their crew, University of California, Berkeley, collected a small number of specimens. In 1949 R.F. Heizer and J. Mills collected radiocarbon samples from Lovelock Cave (Arnold and Libby 1951; Heizer 1956), and in 1950 R.F. Heizer took a grab sample of coprolites from disturbed contexts at Lovelock Cave.

During the 1950s no field work was done at Lovelock Cave, but newly developed radiocarbon dating techniques were applied to materials from this site (Arnold and Libby 1951; Cressman 1951; Heizer 1951a; Libby 1954; Cressman 1956; Heizer 1956; Grosscup 1958). These papers established that initial occupation of Lovelock Cave was about 2000 B.C. (Heizer 1956).

In 1960 Grosscup published a major synthesis of Lovelock Cave archeology. He analyzed and described artifacts which Harrington recovered in 1924 and developed a trait list definition of Harrington's Early, Transitional, and Late Lovelock cultural sequence. Grosscup also used the radiocarbon dates and estimates of rate of deposition in the cave to relate an absolute chronology to the cultural sequence. Grosscup proposed that the Early Lovelock culture phase lasted from 2000 B.C. to 1000 B.C., the Transitional phase from 1000 B.C. to 1 B.C. and Late phase from 1 B.C. to 1000 A.D. Grosscup also argued that there was discontinuity and possibly an occupational hiatus between the Late Lovelock cultural phase and the Northern Paiute (Grosscup 1960, 1963).

In 1965 R.F. Heizer returned to the Humboldt Valley with a field party from the University of California, Berkeley. At this time 500 human coprolites were collected from Lovelock Cave and a number of projectile points were recovered from the guano miner's dump. This work resulted in a series of papers on coprolite analysis (c.f. Roust 1967; Ambro 1967; Cowan 1967; Heizer 1967a, 1967b). These studies indicated that the prehistoric diet, as evidenced in the coprolites, emphasized lacustrine resources. The projectile points recovered in 1967 suggested substantial use of the shelter between A.D. 1000 and historic times (Clewlow 1968a). This finding contradicted Grosscup's (1963) conclusion that Lovelock Cave was largely abandoned between A.D. 900 and historic times.

Heizer returned to Lovelock Cave in 1968 and 1969 to conduct extensive excavations (Heizer and Napton 1970a). Major goals of the fieldwork included recovery of human coprolites and clarification of the stratigraphy and chronology of the site. Stratigraphy and radiocarbon dates indicated to Heizer and Napton (1970a:42) that Lovelock Cave was in fact occupied between A.D. 900 and historic times. Analyses performed on materials recovered from Lovelock Cave in 1968 and 1969 emphasized the lacustrine adaptation (c.f. Napton 1969a, 1969b; Heizer and Napton 1970b).

In addition to contributing toward an understanding of Great Basin pre-history, these studies are important in the development of coprolite analysis as a tool for archeological research (Heizer 1969a; Heizer and Napton 1969).

Some additional fieldwork may have been done at Lovelock Cave by the University of California, Berkeley, in 1971 (Napton 1971), although details have not yet been published.

Collections and Archive Materials

American Museum of Natural History - Materials collected by Nelson in 1936.

University of California, Berkeley

Archeological Research Facility - Field notes by Loud, Heizer, and others.

Lowie Museum of Anthropology - Much of the material collected by Loud in 1912, and all of the materials collected by Heizer in 1936, Heizer in 1965, Heizer in 1968 and 1969, and Napton in 1971.

Nevada State Museum - Much of the material collected by Loud in 1912.

Nevada Historical Society - A few artifacts collected by Loud in 1912 (currently on display) and a catalog of Loud's specimens.

Museum of the American Indian, Heye Foundation - Materials collected by Harrington in 1924 and Harrington's notes. Artifacts purchased from private collections prior to 1924.

Selected References

- Ambro, R.D. 1967, 1970
Arnold, J.R. and W.R. Libby 1951
Baumhoff, M.A. and R.F. Heizer 1958
Bennyhoff, J.H. and R.F. Heizer 1958
Berger, R. and W.F. Libby 1967
Carroll, J.E. 1970
Clewlow, C.W., Jr. 1968a
Clewlow, C.W., Jr. and L.K. Napton 1970
Cowan, R.A. 1967
Cressman, L.S. 1951, 1956
Douglas, C.L. 1969
Dunn, F.L. and R. Watkins 1970
Follett, W.I. 1967, 1970
Gifford, E.W. 1926
Grosscup, G.L. 1957, 1960, 1963
Harrington, M.R. 1925, 1941
Heizer, R.F. 1942, 1951a, 1951b, 1956, 1967a, 1967b, 1969a, 1969b, 1974
Heizer, R.F. and I.W. Johnson 1952
Heizer, R.F. and L.K. Napton 1969, 1970a, 1970b, 1970c, 1970d
Hester, T.R. 1970
Jones, A.C. J.R. Weaver and F.H. Stross 1967
Kidder, A.V. 1925
Kliks, M. 1975
Libby, W.F. 1951, 1954
Loud, L.L. and M.R. Harrington 1929
Mildner, M.P. 1974
Morbeck, M.E. 1970
Napton, L.K. 1969a, 1969b, 1970, 1971
Napton, L.K. and O.A. Brunetti 1969
Napton, L.K. and R.F. Heizer 1969, 1970
Napton, L.K. and G. Kelso 1969
Orchard, W.C. 1925
Poovaiah, B.P., L.K. Napton and D.H. Calloway 1977
Radovsky, F.J. 1970
Roust, N.L. 1967
Tubbs, D. and R. Berger 1967
Tuohy, D.R. and J. Winter 1973
Turner, C.G. 1967
Wyman, L.C. and W.C. Boyd 1937

2. Humboldt Lake-bed Sites

While working at Lovelock Cave in 1912, L.L. Loud, of the University of California, Berkeley, investigated 17 open sites around the margin of the Humboldt Sink. Loud recovered skeletal materials and almost 1,500 artifacts of stone, shell, and bone from these sites. The sites and many of the artifacts are described in Loud's final report (Loud and Harrington 1929: 129-150, also see Heizer and Napton 1970C).

Dansie (1975) reports much local interest in the Humboldt Lake-bed sites during the 1920s and 1930s. Large amounts of skeletal material were collected by local people during those years, and undoubtedly artifacts were collected as well.

In 1950 a University of California, Berkeley, field party under the direction of R.F. Heizer began work at Leonard Rockshelter. In connection with this project a large collection was made from 26Pe5, one of the sites Loud had reported earlier. Elsasser (1958), who described the materials from this site, believed that it was a workshop area connected with fishing activity in Humboldt Lake. Also in 1950, Heizer, Elsasser and Baumhoff collected a radiocarbon sample from a burial, which yielded a date of 733 B.C. \pm 250 (Grosscup 1958:19).

In 1965 the University of California, Berkeley, began a field school in the Humboldt Sink, under the direction of Heizer, but limited work was done at 26Ch15 in that year. In 1968 Heizer and Clewlow published an analysis of over 1,800 projectile points from this site.

More substantial excavations were made at NV-Pe-67, another of the Humboldt Lake-bed sites in 1965 and 1966. This site included 17 house pits, which were among the first to be reported in the Western Great Basin (Cowan and Clewlow 1968). Cowan and Clewlow also discussed the relationship of NV-Pe-67 to other Humboldt Valley sites. They interpreted 25Ch15 as a major center and possibly the locus of summer habitation. Peripheral sites, such as 26Pe15, 26Pe67, and Lovelock Cave were occupied in the winter and spring of high water years, when 26Ch15 would have been inundated.

In 1969 additional field work was done at 26Ch15 under Heizer's direction. Numerous house pits and storage pits were mapped (Heizer 1969b), but details of this research have not yet been published.

To date, no further field work has been done at the Humboldt Lake-bed sites. Heizer and Napton (1970a:42-44) have stressed the importance of 26Ch15, reiterating Cowan and Clewlow's hypothesis concerning the relationship of Lovelock Cave to this site. Tuohy (1970b) described a large collection of shell beads from the Humboldt Sink and Heizer (1974) has discussed decorated stone disks, a puzzling class of artifacts which occur in this area. Most recently Brooks, Galliher, and Brooks (1977) have analyzed human skeletal material from Humboldt Sink and a possible pestle preform from 26Ch15 has been reported (Hester and Busby 1977; Haury 1977; Hester 1977).

Collections and Archive Materials

Museum of the American Indian, Heye Foundation - Materials collected by Harrington and donated collections.

Nevada State Museum - Derby collection and possibly other donated collections

Southwest Museum - A collection from 26Ch15 made by Harrington in 1924 which included 177 projectile points.

University of California, Berkeley
Archaeological Research Facility - Field notes and manuscripts by Heizer and his students

Lowie Museum of Anthropology - Materials collected by Loud in 1912 and by Heizer and others between 1950 and 1969 from 26Pe67, and other sites.

Selected References

Bennyhoff, J.H. and R.F. Heizer 1958
Brooks, S.T., M. Galliher and
R.H. Brooks 1977
Cowan, R.A. and C.W. Clewlow, Jr.
1968
Dansie, D.P. 1975
Elsasser, A.B. 1958
Gifford, E.W. 1926
Grosscup, G.L. 1958
Harrington, M.R. 1927, 1932

Haury, E. 1977
Heizer, R.F. 1969b, 1974
Heizer, R.F. and C.W. Clewlow, Jr. 1968
Heizer, R.F. and L.K. Napton 1970a,
1970b
Hester, T.R. and C.I. Busby 1977
Loud, L.L. and M.R. Harrington 1929
Orr, P.C. 1955
Reed, E.K. 1967
Tuohy, D.R. 1970b

3. Ocala Cave

In 1912 the University of California, Berkeley, sent L.L. Loud to the Humboldt Sink area to salvage archeological materials from Lovelock Cave. In the course of that work Loud visited Ocala Cave, another dry rockshelter being mined for guano. In a few hours he obtained 77 artifacts, including matting, textiles, cordage, and others. These materials are listed, but not described in his report (Loud and Harrington 1929:150-151).

Collection and Archive Materials

University of California, Berkeley. Lowie Museum of Anthropology -
Artifacts collected by Loud in 1912.

References

Loud L.L. and M.R. Harrington 1929

4. Humboldt Cave

In 1936 R.F. Heizer and A. Krieger, two graduate students at the University of California, Berkeley, excavated Humboldt Cave. Formal training in archeological field methods was not available at that time and a primary purpose of this excavation was to gain field experience in archeology (Heizer 1967b). A number of perishable artifacts and 31 definite caches were found. Apparently there was no natural stratigraphy, but it was possible to chronologically order material cultural traits by their relative stratigraphic positions. Artifact descriptions were written immediately after the field work, but a final report for the project was not published until 1956 (Heizer and Krieger 1956).

During the interval between field work and preparation of the final report, knowledge of archeology of the Humboldt Sink had grown considerably. Based on the kinds of materials recovered and a radiocarbon date of 1953 \pm 175 B.P. (Libby 1951), use of Humboldt Cave was attributed to Transitional and Late Lovelock cultures. Analysis focused on the relationship of the archeological materials to the Northern Paiute and traits from Humboldt Cave compared with those reported from California and the Southwest.

Collection and Archive Materials

University of California, Berkeley
Archeological Research Facility. Field notes and manuscripts
pertaining to Heizer and Krieger's 1936 excavations.

Lowie Museum of Anthropology - Archeological materials recorded by
Heizer and Krieger in 1936.

Selected References

Baumhoff, M.A. and R.F. Heizer 1958
Brooks, R.H. 1956
Elsasser, A.B. 1961
Gregoire, C. 1956
Grosscup, G.L. 1958
O'Neale, L.M. 1947

Heizer, R.F. 1951c, 1956
1967b
Heizer, R.F. and A.D. Kreiger 1956
Hester, T.R. 1970
Hubbs, C.L. and R.R. Miller 1948
Libby, W.F. 1951

5. Leonard Rockshelter

In 1936 guano miners found artifacts in Leonard Rockshelter. Some of these materials, including a complete atlatl dart, were described by R.F. Heizer (1938). A University of California, Berkeley, field party visited the site in 1937, verifying location of the atlatl dart discovery and conducting minor excavations. In 1949 Heizer collected samples of guano from the deep artifact-bearing level and submitted them for radiocarbon dating. The results were dates of $8,443 \pm 510$ B.P. and $8,820 \pm 400$ B.P. (Arnold and Libby 1951). Since these dates seemed too old, Heizer submitted fragmentary atlatl foreshafts, which gave a date of $7,038 \pm 350$ B.P. (Arnold and Libby 1951). These dates indicated that archeological materials in Leonard Rockshelter were early, and that further work at the site was definitely warranted.

Heizer returned to the Humboldt Sink in 1950 with a large field party from the University of California, Berkeley. Although a number of sites were investigated at this time, excavations in Leonard Rockshelter were one of the primary objectives of the 1950 project. The uppermost deposits at Leonard Rockshelter included artifacts assigned to the Lovelock Culture (Heizer 1951b). Below this level was a layer of windblown sediment which included an infant burial. Basketry associated with this burial was dated $2,736 \pm 325$ B.P. (Heizer 1951b:92). These materials, dating to the Altithermal climate episode, were termed the Leonard Culture. Below the sediment was a layer of guano. Upper levels of this layer produced netting, olivella shell beads, and an atlatl dart which dated to 7,000 B.P. These materials were designated the Humboldt Culture. The deepest levels of guano rested on lake gravels and yielded a radiocarbon date of $11,199 \pm 570$ B.P. (Libby 1951) but little cultural material occurred at this depth.

Pollen samples were collected during the 1950 excavations. Recently, R. Byrne, C. Busby, and R.F. Heizer (1979) have analyzed these samples. Their analysis excludes the early guano deposits and begins with the windblown sediment believed to be of Altithermal age. Pine and Chenopodium pollen frequencies varied inversely, with a decrease in pine and increase in Chenopodium pollen through time. This suggests desiccation of the lake early in the stratigraphic history of the shelter, followed by succession involving species such as shadscale. High percentages of aquatic pollen in the lowest levels are believed to have resulted from aeolian redeposition of lake sediments after initial recession of the lake.

Collection and Archive Material

University of California, Berkeley

Archaeological Research Facility - Notes pertaining to 1950 excavations.

Lowie Museum - Artifacts collected by Heizer in 1930s and 40s and materials excavated in 1950.

Selected References

Arnold, J.R. and W.F.
Libby 1951
Byrne, R.C., C. Busby and
R.F. Heizer 1979

Grosscup, G.L. 1958
Heizer, R.F. 1938, 1956
Hester, T.R. 1970
Libby, W.F. 1951

6. 26Pe8

In 1950 R.F. Heizer came to the Humboldt Sink with a large field class from the University of California, Berkeley. Among the projects undertaken that year was excavation of 26Pe8, a small cave 250 feet above the valley floor. The site, reported by Baumhoff (1958) was a small storage cave with only occasional use. Basketry crossdated with artifacts found in Lovelock Cave, Humboldt Cave, Catlow Cave, and Roaring Springs Cave suggests that the 26Pe8 cache dates to Transitional Lovelock times, slightly before the time of Christ.

Later Roust (1967:76-79) examined 12 coprolites from 26Pe8. However, those specimens had decomposed somewhat and yielded questionable results.

Collections and Archive Materials

University of California, Berkeley

Archaeological Research Facility - Notes from the 1950 excavations.

Lowie Museum - Artifacts recovered in 1950.

Selected References

Baumhoff, M.A. 1958

Heizer, R.F. 1967b

Roust, N.L. 1967

7. Granite Point

In 1937 R.F. Heizer obtained a collection of artifacts which had been found in Granite Point Shelter during commercial guano mining operations. In 1950, during a petroglyph site survey, some of Heizer's students discovered and excavated Granite Point Cave, a second site located at Granite Point.

Although Bennyhoff and Heizer (1958) considered materials from these sites in their discussion of shell beads, the final report for the Granite Point shelters was not published until 1966 (Roust 1966). The report described two fire hearths and a number of artifacts from these two sites, but drew no inferences. Later Roust (1967:74) analyzed a single coprolite from Granite Point Cave.

Collections and Archive Materials

University of California, Berkeley

Archeological Research Facility - Notes from 1950 excavations.

Lowie Museum - Artifacts obtained by Heizer in 1937 and excavated in 1950.

Selected References

Bennyhoff, J.H. and R.F. Heizer 1958

Heizer, R.F. 1967b

Roust, N.L. 1966, 1967

8. The Concanour Locality

The Concanour Locality was reported to the Nevada State Museum in 1959 and field work was conducted there between 1960 and 1964. The sites yielded 618 artifacts, including Pinto Series projectile points, ground stone, scrapers, choppers, hammerstone, drills, knives and scraper-gravers. In contrast to most later sites, basalt is the predominant raw material. Two circular house rings were also excavated at the Concanour Locality. Stanley, Page and Shutler (1970) suggest that Pinto Series projectile points date between 1,500 B.C. and 4,000 B.C., but that the Concanour locality may have an even greater temporal range.

Collections and Archive Material

Nevada State Museum

Selected References

Stanley, D.A., G.M. Page and R. Shutler, Jr. 1970
Shutler, R., n.d.

9. Northern Churchill County - Early Man Materials

Primarily through the activities of private collectors, several early sites became known in the mid-1960s. Don Tuohy (1968) drew attention to several of these, such as the Sadmat site, the Harvey site, and the Dansie site. He cited the occurrence of fluted points indistinguishable from the Clovis type to support his argument that a Paleo-Indian, free-roaming, big game hunting tradition is represented in a western Clovis complex, the Lake Mohave complex, and the Western Lithic Co-Tradition in general. These early occupations are typically associated with shore features of ancient Lake Lahontan. Tuohy also pointed out that San Diequito-like rock cairns and rock alignments occur on the Sadmat site.

Also in 1968 C.N. Warren and A.J. Ranere considered a wide range of evidence pertaining to early man in the Great Basin. They contrasted the apparent lacustrine adaption of these early peoples to the Desert Culture Concept, applicable to later inhabitants of the Great Basin. Warren and Ranere provided illustrations and an overall description of the lithic artifacts from the Sadmat site. Assemblages and certain aspects of lithic technology of the San Diequito complex of the southern Great Basin were contrasted with early materials from the Haskett site in Idaho. The Sadmat materials were most closely related to the northern Great Basin assemblages and the term "Hascomat complex" was used to describe these materials. It was suggested that the Hascomat complex dated to the last recession of Lake Lahontan, between 6,000 and 7,000 B.C.

Collection and Archive Materials

Nevada State Museum. Collections from Sadmat, Dansie, and Harvey sites.

Selected References

Tuohy, D.R. 1968, 1969
Warren, C.M. and A.J. Ranere 1968

10. Inventories in the Northern Carson Desert/Hot Springs Mountain Area

As early as 1976 'pre-release clearances' were being conducted by the Bureau of Land Management in order to ascertain the presence of National Register values which could be adversely affected by proposed geothermal leasing.

In 1976 Nancy Botti conducted two inventories in the vicinity of the Hot Springs Mountains. She reported on previous work in the area which amounted to spot checks and two previously recorded 'early man' sites. The inventories resulted in 29 new sites being recorded. Recommendations were to avoid occupancy on seven of those cultural resources.

In 1977 John Roney conducted additional inventories near Fallon and Fernley. The inventory near Fernley proved negative. Twenty-eight sites were found during the course of the inventories near Fallon. During this inventory the first 'pebble mound' site was recorded. Mild controversy surrounds the origin of these mounds. Materials from the Western Pluvial Lakes Tradition (Lake Mohave points) were recorded and collected from sites during this inventory. A segment of the Carson River Emigrant route was also relocated. Four sites were determined to have National Register potential.

In 1979 the Bureau of Land Management contracted with Basin Research Associates to do a Class II Inventory in the Cinnebar Hill area (Bard et al. 1979). Fifty aboriginal sites were located. Two sites with historic evidence were found for 'early man' and only 'possible' Western Pluvial Lakes Tradition materials were observed. The Altithermal/Mediterranean period was well represented.

In 1981 the Bureau of Land Management published an overview produced by Basin Research Associates in the Cultural Resource Series (Bard et al. 1981). This excellent overview provides a fine narrative of the Carson and Humboldt Sinks and gives a broader view of the previous research in the area.

Collections

Nevada State Museum - Artifacts collected by Botti and Roney.

Adam E. Treganza San Francisco State University Anthropology Museum - Material collected by Bard, Findley and Busby.

Selected References

- Bard, J.C., C.I. Busby and J. Findley 1981
- Bard, J.C., J.M. Findley and C.I. Busby 1979
- Botti, N. 1976a, 1976d
- Roney, J.R. 1977b, 1977c

11. Winnemucca Lake Caves

In 1952 Philip Orr began excavating a series of rockshelters on the east side of Winnemucca Lake. The work, conducted under the auspices of the Nevada State Museum, the Western Speleological Institute (Santa Barbara Museum of Natural History) and National Geographic, was intended to salvage materials threatened by guano mining and private collectors.

The first excavations were at Stick Cave and Crypt Cave. Stick Cave was a cache cave which yielded basketry, fishhooks, caches of chub, points, and a small painted granite effigy. Crypt Cave was used for habitation and burials. In addition to a number of mummies, this site yielded a cache of grasshoppers and a horse bone which could indicate association between Pleistocene fauna and humans (Orr 1952).

During 1952 through 1955 work continued at five other Winnemucca Lake Caves. Potentially most important is Fishbone Cave, where cultural materials may be associated with extinct Pleistocene fauna. In a preliminary report Orr (1956) describes stratigraphy in this site. Level 3, which consisted of dust, ash, burned guano, and other perishable organic matter included one Pinto and one Amargosa Point. Fragments of horse and camel bone found in Level 3 are believed to have originated in Level 4. Level 4, which underlies Level 3, contains more sand and less perishable material. It has been intruded upon by many cache pits from Level 3, resulting in some mixing of the deposit. Level 4 includes horse and camel bone and brush that was radiocarbon-dated to $10,900 \pm 300$ B.P. String, basketry, netting, and matting were all found in Level 4. Also, in Level 3 an awl made of horse bone was found. Thus, Fishbone Cave is very important in that it may show the contemporaneity of man and extinct fauna in the Great Basin. However, most students of Great Basin prehistory hesitate to accept this evidence in its present preliminary form (Heizer and Baumhoff 1970:3-4).

In another of the Winnemucca Lake Caves, Chimney Cave, Orr found a mummy which was radiocarbon-dated to 2,500 B.P. (Orr and Berger 1965). This specimen was used to test reliability of radiocarbon dates on various types of materials. Close agreement was found among dates on skin tissue, bone collagen, and vegetal clothing.

Although other brief accounts of the Winnemucca Lake Caves excavations are available (Orr 1955, 1972, 1974), a final report for these important sites has not yet been written. However, several papers do deal with specialized aspects of the Winnemucca Lake Caves. Harrington (1959) described an unusual atlatl-flaking tool combination found in Cowbone Cave. Sears and Roosma (1961) analyzed pollen from guano and fishbone. Although their results support the Altithermal concept, with an extreme of aridity at about 6,250 B.P., lack of a continuous profile and provenience for some of the samples hamper their study.

Finally, Rozaire (1974) has described basketry from these sites in detail, relating technique of manufacture to function of the basketry and considering temporal and areal distribution of the various forms represented in the Winnemucca Lake Caves.

Collections and Archive Materials

Nevada Historical Society - Atlatl described by Harrington (1959). Nevada State Museum - Notes and artifacts from Orr's 1952-1958 excavations.
Santa Barbara Museum of Natural History - Possibly some materials recovered by Orr in 1952-1958.
Southwest Museum - Possible stone artifacts collected by R. Simpson (Orr 1972:125).

Selected References

- | | |
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| Berger, R., and G.J. Fergusson and W.F. Libby 1965 | Harrington, M.R. 1959 |
| Broecker, W.S. and L. Klup 1957 | Heizer, R.F. and M.A. Baumhoff 1970 |
| Broecker, W.S., L. Klup and C.S. Tucek 1956 | Orr, P.C. 1952, 1955, 1956, 1972, 1974 |
| Broecker, W.S. and P.C. Orr 1958 | Orr, P.C. and R. Berger 1965 |
| Crane, H.R. and J.B. Griffin 1958 | Rozaire, C.E. 1974 |
| Grosscup, G.L. 1958 | Sears, P.B. and A. Rossma 1961 |

12. Winnemucca Lake Area

In 1958 N.L. Roust reported a collection of archeological specimens collected by amateurs from a series of 30 caves in the Winnemucca Lake area, their locations undisclosed. Roust describes basketry, matting, rope and other perishable artifacts. These materials are noted as extending the geographical range of the Lovelock Culture.

In 1972 private collectors again loaned a collection of perishable artifacts to the University of California, Berkeley. Hester (1974) has described some of these materials. One specimen was an atlatl with an atlatl weight attached and a detachable bone engaging spur. Basketry from above the atlatl was radiocarbon-dated to $7,980 \pm 610$ B.P. Hester also describes two animal skin pouches which contained cutting tools (one with fish scales adhering), a flaking tool, a bone "sweat scrapper," a number of Eastgate series projectile points, and projectile point blanks. Follett (1974) identified the fish remains found with the archeological materials.

Don Tuohy (1974) reports a third set of artifacts taken from the Winnemucca Lake area by private collectors. The artifacts Tuohy describes are fine, coiled baskets decorated with feathers of teal, blackbirds, merganser, and grebe. Matting associated with the baskets yielded a radiocarbon date of 910 ± 80 B.P. Tuohy suggests that the raw basketry in the western Great Basin indicate the fine coiled basketry was produced locally and not imported from California, as Baumhoff and Heizer (1958) have argued.

Collections and Archive Materials

Favell Museum of Western Art and Artifacts, Klamath Falls, Oregon -
Artifacts described by Hester (1974) and other materials found with them.

Nevada State Museum - Artifacts described by Tuohy (1974).

University of California, Berkeley

Archaeological Research Facility - Notes on artifacts taken from Winnemucca Lake along with those described by Hester (1974).

Lowie Museum of Anthropology - Artifacts described by Roust (1958).

Selected References

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|--------------------|------------------|
| Follett, W.I. 1974 | Roust, N.L. 1958 |
| Hester, T.R. 1974 | Tuohy, D.R. 1974 |

13. Coleman Locality

During work in caves at Falcon Hill on the northern end of Winnemucca Lake in 1959 through 1961, the Nevada State Museum made surface collections at the nearby Coleman Locality (Shutler n.d.). Artifacts from the Coleman Locality were briefly mentioned by Tuohy (1968) and by Warren and Ranere (1968) who relate them to the San Diequito Complex. These materials have been described and analyzed by Don Tuohy (1970). Of the four localities which Tuohy considered, one is a basalt quarry, two are workshops where basalt was the primary raw material, and one was a campsite. Projectile points and other artifacts were clearly comparable to Anathermal aged materials from Hathaway Beach. Tuohy also compared the artifacts from the Colman Locality to MacNeish's postulated Blade, Burin, and Leaf-point Tradition, which might date between 30,000 and 11,000 years ago.

Collections and Archive Materials

Nevada State Museum

Selected References

Shutler, R., Jr. n.d.
Tuohy, D.R. 1968, 1970a
Warren, C.M. and A.J. Ranere 1968

14. Falcon Hill Sites

In 1961 Richard Shutler, Jr., of the Nevada State Museum conducted archeological investigations at a number of archeological sites in Washoe and Churchill Counties. Among these were 11 caves and rockshelters at Falcon Hill, on the north end of Winnemucca Lake (Shutler n.d.).

Follett (1963) published a general, preliminary account of the Falcon Hill materials, proposing that they represent a "Lakeshore Ecology Phase" which may be contrasted with the Desert Culture concept. Radiocarbon dates from the Falcon Hill sites indicate a lacustrine adaptation by 7,590 B.C. Shutler also suggested that there was strong archeological continuity between the Lakeshore Ecology Phase and the historic Northern Paiute.

These preliminary and specialized reports do not deal with the full range of materials from the Falcon Hill sites. These sites are treated in detail by Hattori (1982).

Collections and Archive Materials

Nevada State Museum - Notes and artifacts.

Selected References

Follett, W.I. 1963
Hattori 1982
Shutler, R., Jr. 1968, n.d.

15. San Emidio Desert and Area South of Gerlach

Previous work in the San Emidio Desert and Gerlach area began in November 1974 with a small survey of geothermal test hole sites. This was followed by similar projects until Dan Brooks inventoried two sections east of the Fox Range in 1977. Brooks located several sites of the Desert Archaic Tradition. Brooks presented three hypotheses that could be applied to future work in the region in order to establish aboriginal resource utilization.

In 1978, Peggy McGuckian and Regina Smith inventoried eleven sections east of the Fox Range but north of Brooks' survey. This resulted in 45 new sites recorded. All diagnostic projectile points dated to the Medithermal period with no indicators from the most recent times. This inventory was followed by another series of small projects. Then in 1980 Richard Hanes, John Roney and Fred Petersen inventoried three sections in the San Emidio Desert. Twenty-five sites were located. The projectile point types suggest that the principal time of occupation is the past 4,000 years. Hanes felt that occupation is associated more with small water sources than with lake fluctuation levels.

In 1981 what started out to be a routine mining operation resulted in the location of a major find for this area (Smith 1981). A drilling pad was placed immediately adjacent to a prehistoric quarry. This quarry has aboriginally dug pits where lithic material was extracted. The initial report on this site included a literature search focusing on intensity of use and distribution of chert in the surrounding area. Further work is currently being scheduled for this quarry. Smith's 1981 report contains a more complete bibliography of the area to date.

Collections and Archive Materials

Nevada State Museum - Materials from all surveys done by Bureau of Land Management.

Selected References

Brooks, D. 1977e
Hanes, R. 1980

McGuckian, P. 1978b
Smith, R.C. 1981

16. Inventories in the Western Black Rock Desert

The Black Rock Desert has been the focal point of a number of geothermal "prelease" clearances. These clearances were conducted to locate large potentially eligible National Register sites on which the impacts would be prohibitively expensive to mitigate. It was felt the stipulations on leases, such as no surface occupancy, would protect these sites. Certain conflicts with the Applegate-Lassen Trail, a nearly pristine portion of the emigrant trail to California, intensified inventories in this area. Other historical routes contributed to the need for more inventory data. In 1976 Nancy Botti and Steve James conducted extensive "prelease" inventories in the vicinity of Gerlach, Nevada, on the western edge of the Black Rock Desert. Numerous sites were found and recorded. Isolated finds were collected and recommendations were made to avoid the major sites. One historical site, Granite Creek Station, was considered to have National Register potential as well as two prehistoric districts. No physical remnants of the historic trails through this area were located.

Continued geothermal interest in the Black Rock Desert resulted in three more inventories in the Black Rock Desert the following year by Dan Brooks. His surveys located an extensive prehistoric quarry area east of the Double Hot Springs. Southwest of Trego Hot Springs, Brooks located 19 sites. Nine of these were located around seeps and the remaining 10 were isolates. Diagnostic projectile points from three of these sites suggest occupation during the Rose Spring/Late Prehistoric times. At Trego Hot Springs, Brooks located several prehistoric sites within a mile radius lending further credence to the conclusion that springs and seeps were a major factor in site location decisions rather than lake shore occupation. Brooks also referred to 26Pel18 located a half a mile away, which is covered separately in this overview.

In 1978 two additional surveys were conducted on the Black Rock Desert. Peggy McGuckian reports five isolated finds recorded in six sections east of the Granite Range. Four of the six sections had no cultural material whatsoever. The only diagnostics were Rose Spring/Eastgate points. Again, the absence of local water sources may account for the absence of any substantial cultural resource sites. Dan Brooks' work near Black Rock Point yielded nineteen sites, but only two show any substantial size. One site is directly associated with the playa and yielded evidence of medithermal occupation.

Not until 1980 were any additional inventories conducted on the Black Rock Desert. At this time, work concentrated around Pahsupp Mountain. Twenty-nine cultural resource sites were recorded by Fred Petersen, Richard Hanes and John Roney; only six were of substantial size. Five of the six were lithic procurement sites, while the sixth had been devoted to tool manufacturing and repair. Only two projectile points were typable, yielding an occupational time span of 1500 B.C. to A.D. 1300. This area was relatively sparse culturally.

Collections and Archive Materials

All Bureau of Land Management Collections are curated at the Nevada State Museum.

Selected References

Botti, N. 1976b, 1976c	McGuckian, P. 1978a
Brooks, D. 1977a, 1977b	Roney, J. 1980b
1977c, 1978	

17. 26Pel18, Trego Hot Springs

The Nevada State Museum surveyed 86 miles along a proposed Bell Telephone underground route in 1971. Among the sites found during this survey was 26Pel18, a major occupation site near Trego Hot Spring. Test excavations showed significant depth and cultural features. Nevada Bell funded large-scale excavations by the Nevada State Museum under the field supervision of James Toney in 1972. Some further field work was done in 1973.

The first published report of this site was by Jonathan Davis and Robert Elston (1972) who described its stratigraphy. They interpreted the stratigraphy in terms of climatic variables. Sometime before 3300 B.P. a deep lake occupied the playa. The lake receded during a dry interval (possibly the Altithermal). Between 3300 and 1400 B.P. moister conditions produced an ephemeral lake, and the major occupation of 26Pel18 occurred at this time. Around 1400 B.P. the climate again became drier, then moister again, and, finally, the dry conditions which prevail today were established.

In 1980 Susan Seck completed a comprehensive report on 26Pel18. She listed the radiocarbon dates, which ranged from 3810 B.P. to 1120 B.P. (Valastro, Davis, and Varela 1979), and related them to the climatic and cultural sequence. Cultural features and artifacts from the site were described in her report which also included a number of specialists' appendices (Clark 1980; Danise 1980; Davis 1980; Rosen 1980; Stearns 1980; and Wright 1980). Seck concludes that 26Pel18 was occupied between 4000 B.P. and 1000 B.P. Plant foods, jackrabbit, and cottontail seemed to be emphasized. The occurrence of semi-permanent structures suggests extended occupation and Seck concludes that 26Pel18 was a summer camp from which people exploited lacustrine resources on the now dry playa.

Collections and Archive Materials

Nevada State Museum

Selected References

- | | |
|-----------------------------------|--|
| Clark, W.H. 1980 | Seck, S.M. 1980 |
| Dansie, A. 1980 | Stearns, S. 1980 |
| Davis, J.O. 1977a, 1977b,
1980 | Toney, J. 1971, 1973 |
| Davis, J.O. and R. Elston
1972 | Valastro, S., Jr., E.M. Davis,
and A.G. Varela 1979 |
| Jensen, A. 1975 | Wright, C. 1980 |
| | Rosen, M.D. 1980 |

18. Granite Creek

The first work done in this area started in 1975 when a burn area was slated for reseeding. John Roney inventoried and recorded four lithic scatters with a wide range of tools, including ground stone.

In 1980 several BIM archaeologists did a prelease clearance for geothermal exploration. A total of 46 cultural resource sites were recorded during this project. The Granite Creek Petroglyphs had long been known but the extent of the surrounding lithic scatter had not been fully recorded prior to this project. This site is 300m x at least 900m and contains a buried component at least 50 cm. deep with faunal material. In addition to this site, several other sites evidenced buried materials, and a hunting blind in the saddle above the petroglyphs lends support to the hypothesis that rock art was a form of hunting magic.

The range of projectile points includes Humboldt Concave B, Pinto, Martis, Elko, Rose Spring/Eastgate and Cottonwood with 13 of the 24 points belonging to the Rose Spring/Eastgate series. A Rose-Spring/Eastgate predominance might be expected in this setting; however, the possibility of a buried Elko or Pinto component cannot be ignored.

The range of activities and frequency of ground stone suggests that these sites were base camps for hunting and seed processing.

Collections and Archive Material

Nevada State Museum

Selected References

Roney, J.R. 1975, 1980c

19. Northwest Nevada Project

In 1971 a small crew from the University of Missouri, Columbia, under the direction of Roberta McGonagle, excavated test pits at Silent Snake Spring and Beaver Dam Shelter in the Calico Mountains. McGonagle (1973) describes stratigraphy and features found in a four-foot by four-foot test pit at Beaver Dam Shelter. Projectile points (Desert Side Notched, Cottonwood Triangular, and Rose Spring series) found in this site suggest that most occupation occurred after 1500 B.C. The small amount of faunal material recovered at Beaver Dam Shelter and Silent Snake Spring was also identified.

In 1972 McGonagle conducted a systematic survey of two large tracts of land in the High Rock Lake area. One tract was adjacent to High Rock Lake itself at elevations between 5,000 and 6,000 feet. The other tract was on Hog Ranch Mountain at elevations between 6,000 and 7,000 feet. These two tracts were selected in order to test hypotheses about site location and the distribution of prehistoric activities in relation to environmental zones.

McGonagle found that during the Parman and Calico phases (8000 B.C. to 5000 B.C.) land use emphasized lower elevations. On the basis of stylistic changes and obsidian hydration measurements, she believes that there was an occupational hiatus during the Altithermal, prior to the Silent Snake Phase. Early Smoky Creek points (Elko series) were numerous and occurred at all elevations. Grinding tools were scarce at high elevations. Rose Spring/Eastgate points, which are diagnostic of the Late Smoky Creek phase (A.D. 500 to A.D. 1300), were found only at lower elevations, marking a change in adaptation and possibly replacement of earlier peoples by a new population. The arrival of Numic speaking Paiutes after A.D. 1300 may mark another population replacement, although use of McGonagle's study areas was minimal during this phase.

Selected References

McGonagle, R.L. 1971, 1972, 1973, 1979

20. 26Wa177, High Rock Canyon

In 1962 archeologists from the University of California, Berkeley, made a large surface collection from an extensive quarry-workshop area in High Rock Canyon, just outside the Winnemucca District. S. Ragir and J. Lancaster (1966) described the sites and lithic materials from them. They used this information to discuss reduction sequences.

Collections and Archive Materials

University of California, Berkeley, Lowie Museum.

Selected References

Ragir, S. and J. Lancaster 1966

21. High Rock Country

Thomas Layton excavated Smoky Creek Cave in the Calico Mountains in 1964 and 1965. His master's thesis (Layton 1966) described these excavations and the artifacts which were recovered. In addition to excavating Smoky Creek Cave, Layton made surface collections from open sites adjacent to the shelter. Based on the occurrence of large numbers of Elko series projectile points, Layton inferred that occupation of Smoky Creek Cave began about 500 B.C. Eastgate, Rose Spring, Desert Side Notched, and Cottonwood projectile points indicated that occupation continued until some time after A.D. 1300. Shell beads found in the cave support this temporal interpretation. Projectile points from the surface collection included types comparable to the Humboldt and Pinto series, suggesting occupation as early as 2500 B.C. Obsidian hydration measurements also indicated that the open sites were occupied earlier than Smoky Creek Cave.

Layton returned to the High Rock Country in 1967, conducting additional excavations in Smoky Creek Cave and sampling Silent Snake Springs, Little Smoky Shelter, Swallow Marsh Shelter, and Hanging Rock Shelter. In 1968 he excavated Hanging Rock Shelter and Silent Snake Springs, mapped Last Supper Cave, and made surface collections at pluvial Lake Parman. On the basis of recovered data, Layton established a six-phase cultural sequence extending from about 8000 B.C. to about A.D. 1920, relating the sequence to Antev's three-stage environmental sequence, and specified the projectile points characteristic of each phase. More detailed interpretation of the Western Pluvial Lakes Tradition, Lake Parman Localities, the Great Basin Archaic and Silent Snake Springs site have also been published (Layton 1979; Layton and Thomas 1979). Obsidian hydration measurements supported the relative projectile point chronology (Layton 1972) and suggested reduced occupation or an occupational hiatus during the hot, dry Altithermal climatic episode.

Layton also argues for a second period of reduced occupation between A.D. 200 and A.D. 1300, again citing arid climatic conditions as the reason. Layton (1973) also compared obsidian hydration on surface-collected and excavated materials. He was able to show that surface materials hydrated at a faster rate than buried materials, but that relative chronological ages could be accurately inferred from hydration measurements on surface collected artifacts.

D.H. Thomas (1969, 1970) analyzed faunal materials from Hanging Rock Shelter, Silent Snake Springs, Smoky Creek Cave, and Little Smoky Rock Shelter. He found that mountain sheep were emphasized in the vicinity of Silent Snake Spring prior to 1500 B.C. After this date sheep decreased, while rodents and lagomorphs increased. Thomas (1969:399) suggests that this change might reflect increased use of snares. At Hanging Rock Shelter mountain sheep were important prior to 6000 B.C. and again between A.D. 500 and A.D. 1000. Cotton-tail rabbits were important through the sequence, but especially between

A.D. 1 and A.D. 500. Jackrabbit drives may have been held in this area. Cows became an important source of meat in post-contact times. Thomas (1969) also used data from these sites to refine methods of treating faunal remains quantitatively in archeological analyses.

Layton's most recent investigations have been the excavation of Last Supper Cave on the Sheldon Antelope Range in 1973 and 1974. Last Supper Cave included evidence of post-contact resting by Indians (Layton 1977) and buried Parman phase materials associated with a deposit of shell which gave radio-carbon dates of $8,630 \pm 195$ and $8,790 \pm 350$ and charcoal giving dates of $8,960 \pm 90$ (Davis 1978).

Collections and Archive Material

Nevada State Museum - All materials collected except those from Smoky Creek Cave.

University of California, Davis - Materials from Smoky Creek Cave.

Selected References

- | | |
|--------------------------------------|------------------------------|
| Davis, J.O. 1978 | Layton, T.M. and D.H. Thomas |
| Layton, T.N. 1966, 1967, 1970, 1972, | 1979 |
| 1973, 1977, 1979 | Thomas, D.H. 1969, 1970 |

22. Black Rock Range

The BLM contracted with the archeological survey at UNR to do a cultural resources overview to determine the suitability of certain portions of the Black Rock Range for inclusion in the Federal Wilderness Program. A 1% sample of the 84,000 acre area yielded a wide variety of cultural sites. Results of the project indicated people of the Early Smoky Creek Phase (1500 B.C. - A.D. 500) and earlier phases preferred sites at higher average elevations. Later phases were poorly represented. Other findings imply a sexual division of land use as a result of resource distribution (Elston and Davis 1979:121).

One site which was identified for more through investigation was Summit Twin Springs. In 1980, C. William Clewlow, Jr., was contracted to do test excavations at Summit Twin Springs to obtain data that could be used to determine significance and protective measures. Summit Twin Springs is a large open site with a large buried component of at least 1.4 meters in depth. The excavations indicate that the site was intensively occupied over a long period of time, with a wide range of tasks being performed. Much of the lithic material appears not to be available locally. Temporal indicators show the site may have been occupied as early as 4000 B.C. and until A.D. 500. This site clearly has National Register potential. Recommendations were given to protect the site.

Collections and Archive Material

Ancient Enterprises is currently housing materials collected by Clewlow.

Selected References

Clewlow, C.W., Jr. 1981b
Elston, R. and J.O. Davis 1979

23. Pine Forest Range

In 1976 John Roney surveyed an area at the south end of Onion Reservoir for a proposed parking area and toilet facilities. This survey yielded an archeological site with a buried component. Based on the information potential of this site, excavation was recommended.

Later that year, Robert Elston and Cameron Covington conducted test excavations in order to determine period of occupation, site activities, National Register potential, and mitigation recommendations. Their determinations answered those questions and recommended further work on the site. They also recommended reconnaissance, surface collection, and test excavations of the Onion Reservoir Area to mitigate impacts from visitor use. In addition, a long-term inventory project was recommended.

In response to these recommendations, long-term inventories and further intensive studies were undertaken.

In 1977 John Roney and three other BLM archeologists began a series of systematic inventories of the Pine Forest Recreation Area. The first of these inventories located 53 sites which show a clear tendency to occur near Blue Lake, Onion Valley, and Little Onion Valley. Most intensive use of the area seems to have occurred between 1500 B.C. and A.D. 500, but occupation began as early as 4000 B.C. and persisted until after A.D. 1300. Appropriate mitigation to protect the cultural resources was implemented during this inventory (Roney 1977d).

Early in 1978, Elston, Covington, and Davis completed their second report on their excavations at Onion Reservoir. Elston concluded that the sites around Onion Reservoir were temporary camps used for hunting and hunting related activities. Ground stone was rare indicating limited consumption of seed products at the time of occupation. A strong association with meadows follows the observations of other researchers in nearby regions. If this pattern holds true, Elston predicted winter camps may occur in Bog Hot Valley.

A high degree of activity patterning of these sites was exhibited and controlled collecting may prove beneficial. Future work in pollen sampling was recommended.

Later in 1978, BLM archeologists continued the inventories begun the previous year. Large numbers of Basque aspen carvings were recorded and 98 prehistoric sites. The project area lies between 7,200 and 9,159 feet and includes the area at the head of Leonard Creek on the east side of the range to the head of Alder Creek on the west side. The 101 typable projectile points collected during this survey show a full range of occupation from the Parman Phase through the Cottonwood and Desert Side Notched series.

Another find in the area was a major ambush site where animals from two adjoining drainage systems may have been harvested. Examination of projectile points indicate the site may have been in use between 4000 B.C. and A.D. 1300. Tips and midsections were plentiful but dart and arrow shafts with broken bases were probably salvaged and repaired elsewhere. Roney observed that the Elko series projectile points predominated. There was evidence both for various communal activities, such as game drives, butchering and hide preparation, and for individual activities, such as large or small game hunters.

The following year, 1979, BLM archeologists conducted further surveys on the hillsides of the Pine Forest and recorded 144 additional sites, bringing the total to 327. Roney (1977d) submitted an update of the findings for all three years.

Ernest Lohse (n.d.) has recently provided a comprehensive overview of the northwestern portion of the District. This study discusses the previous research and resultant interpretations in this portion of Nevada. Lohse compares and contrasts the views presented by the various researchers and sets up a predictive model for site form and site distribution followed with a description of known (tested) sites. The end summary presents an evaluation of previous hypotheses as well as giving recommendations for future research and management.

Elston and Earl (1979) have produced a similar overview for the adjacent Sheldon Antelope Range.

Collections

University of Nevada, Reno, Anthropology Department Museum - materials collected by Elston.

Nevada State Museum - Materials collected by BLM Archeologists.

Selected References

Elston, R. and C. Covington
1976

Elston, R., C. Covington and
J.O. Davis 1978

Elston, R. and P.I. Earl
1979

Lohse, E.S. n.d.

Roney, J.R. 1976, 1977d

24. Dyke Hot Springs

In the Summer of 1976, the Bureau of Land Management conducted a cultural resource survey at the foot of the Pine Forest Range in the vicinity of Dyke Hot Springs resulting in the discovery of 37 sites (Botti and James 1976). The contents of these sites indicated occupancy as far back as the Western Pluvial Lakes Tradition. Early settlement was along lakeshore margins. Subsequently, as the lakes dried, occupancy moved inland to springs.

James (1978) summarizes and elaborates upon Botti and James (1976).

Collections and Archive Material

Nevada State Museum - Materials collected by Botti and James.

Selected References

Botti, N. and S.R. James 1976
James, S.R. 1978

25. Eastern Arm of the Black Rock Desert

In 1966 R. Cowan and C.W. Clewlow, graduate students from the University of California, Berkeley, conducted site surveys, surface collection, and limited test excavations in the Black Rock Desert. They found abundant evidence of Anathermal occupation on the floor of the desert, where it is assumed to reflect an adaptation based on lakeshore or marshland resources. Archeological sites of Medithermal age, by contrast, were strongly associated with present-day springs (Clewlow 1968b).

Further analysis of crescents which Clewlow collected from the Black Rock Desert along with additional specimens provided by private collectors and specimens from other parts of the Great Basin was completed by Mitchell et al. (1977). They were able to show considerable variation in size, shape, presence or absence of smoothing, and breakage patterns. They interpret this variation as an indication that there were a number of ways in which crescents were used.

T.R. Hester (1977a) described another private collection from 26Hu310, a site near those which Clewlow (1968b) described. In 1978 the Bureau of Land Management conducted a Class II inventory over about seven sections, centered around McFarlan's Hot Spring. This area included the southern end of 26Hu310. Western Pluvial Lakes Tradition materials occurred exclusively on the playa. A major Great Basin Archaic occupation centered at the hot springs, but hearths, grinding stones, and lithic artifacts were also scattered throughout a belt of sand dunes on the playa margin. The alluvial apron and bedrock uplands in this area were found to include important cryptocrystalline rock quarries (Roney 1979).

Recent work by Ruth Gruhn, C. William Clewlow, Jr., and Richard Reynolds in the Eastern Arm has attempted to establish direct associations between cultural materials and extinct Pleistocene fauna (Clewlow 1981a). Thus far, confirmation of such an association remains elusive, but future work in this region still holds promise.

Collections and Archive Material

Nevada State Museum - Artifacts collected by BLM in 1978.

University of California, Berkeley

Archaeological Research Facility - Notes from Cowan and Clewlow's 1966 work, documentation and photographs of private collections, including those reported by Hester (1977).

Lowie Museum - Artifacts collected by Clewlow and Cowan in 1966, and possibly private collections.

Selected References

Clewlow, C.W., Jr. 1968b

Hester, T.R. 1977a

Mitchell, J.L., P. Rosa, S. Castagnetto and T.R. Hester 1977

Roney, J.R. 1979

26. Barrel Springs

R.A. Cowan and C.W. Clewlow excavated test pits at the Barrel Springs site in 1966. In 1968 Cowan returned to conduct large-scale excavations. The site was both a camp and a rhyolite quarry. Most of the projectile points were Elko and Rose Spring/Eastgate series. Cowan (1972) concluded that biface manufacturing was a major activity at Barrel Springs and he defined a four-stage reduction sequence for this industry. D.H. Thomas (1972) analyzed faunal materials from this site. Because 1/4 inch screen was used, analysis of small and medium mammal bone was not considered reliable. Of the large mammal bone, through, mountain sheep bone was vastly predominant and deer was completely absent.

Collections and Archive Material

University of California, Berkeley

Archaeological Research Facility - Notes.

Lowie Museum - Artifacts and other excavated materials.

Selected References

Cowan, R.A. 1972

Thomas, D.H. 1972

27. Seven Troughs Range

In 1969 James Toney investigated a series of obsidian quarry and workshop

sites in the northern part of the Seven Troughs Range. He surveyed several sections, then excavated a small rockshelter and made surface collections on an open site. The obsidian in this area occurred as nodules which were reduced to cores and bifacial blanks. In addition to quarry and workshop debris, Toney found a range of other artifacts, suggesting that prehistoric activities were not restricted to lithic procurement. In 1980 Regina Smith relocated several sites reported on by Toney near Egbert Spring and recorded additional sites.

Collections and Archive Material

Nevada State Museum.

Selected References

Smith, R.C. 1980b
Toney, J. 1969, 1972

28. Humboldt National Forest

Although the Bureau of Land Management has no jurisdiction over the national forests, there is a portion of the Humboldt National Forest which lies wholly within the Winnemucca District and has received a minimum of study. In 1977 Nevada State Museum conducted a literature search of previous research and in 1978 Michael Moen conducted a reconnaissance of selected areas. This report briefly discusses the types of sites found and outlines site prediction and sensitivity areas.

Collections and Archive Material

None.

Selected References

Dansie, A. 1977
Moen, M.E. 1978

29. Twin Valley Spring

Twin Valley Spring is located in the Owyhee Desert along the East Little Owyhee River in northeastern Humboldt County.

In 1977 BLM Archeologist John Roney was asked to do a cultural resources inventory for a wild horse trap and loading facility. The inventory resulted in seven new sites all in a hunting context. Some time later, Merlin McCole of the Nevada Department of Fish and Game located a mountain sheep skull eroding out of the terrace directly in front of the loading facility. The skull was sent to Geoff Spaulding, Geochronological Laboratories, University of Arizona. His findings indicated a good possibility that the specimen was a Pleistocene subspecies.

As a result of the preceeding events, paleontological and archeological excavations were conducted. Samuel K. Webb and Wade E. Miller did the paleontological investigations. They concluded that the bighorn sheep skull was not Pleistocene in age and recommended no further paleontological studies. The archeological portion of this study was conducted by David B. Madsen. Artifacts were analyzed but faunal materials which included artiodactyl and small rodents from the hearth were not. The projectile points were of the Elko series and suggest occupation prior to 2,000-2,500 years ago in the context of a short-term hunting camp.

Collections and Archive Material

Brigham Young University Archeology and Anthropology Museum - Materials collected by Webb, Miller and Madsen.

Nevada State Museum - Materials collected by John Roney.

Selected References

Roney, J.R. 1977e

Webb, S.K., W.E. Miller and D.B. Madsen 1979

30. William Stock Exchange

In 1976 a proposal for a land exchange between the Humboldt National Forest, Mr. William Stock and the Bureau of Land Management resulted in an archeological inventory of some 13,000 acres of land in the northern Paradise Valley region. A total of 82 prehistoric and historic sites were located and sample collections were taken from all but eight very small sites. In his report, Dr. Evan DeBloois (1976) describes the collections as one unit. The report also includes discussions of several projectile point types and other miscellaneous chipped stone artifacts.

DeBloois' conclusions concerning site size, classifiable artifacts and single versus multiple components were very general ones. His recommendations singled out sites needing additional study prior to the land exchange taking place.

Collections and Archive Material

U.S. Forest Service Regional Office, Odgen, Utah.

Selected References

DeBloois, E. 1976

31. North Fork of the Little Humboldt River

In 1972 the University of California, Berkeley, and Stanislaus State University conducted a summer archeological field school in the North Fork of the Little Humboldt River area under the direction of Dr. L. Kyle Napton (Bard, Busby and Kobori 1979:3). Apparently the Crossroads Rockshelter was tested at this time and another shelter farther up the South Fork of the Little Humboldt River may also have been partially excavated. However, details of this work are not presently available.

The University of California Archaeological Research Facility conducted surveys, surface collections, and excavations along the North Fork of the Little Humboldt River in 1973 and 1974. Fourteen open sites and three rockshelters were recorded. Extensive excavations were made in Ezra's Retreat, the largest of the rockshelters (Bard, Busby and Kobori 1979), and test excavations were made at Stolen Shelter, a small, badly disturbed rockshelter (Busby, Spencer and Swezey 1976). Two of the open sites, North Fork Lithic Scatter and Pink Point, were intensively collected, and artifacts were collected from several of the other open sites as well.

Ezra's Retreat seems to have been occupied from sometime before 2200 B.C. until about A.D. 1500, with most intensive use between 1800 B.C. and A.D. 200. Bard, Busby and Kobori (1979) describe the stone and bone artifacts recovered from this site, including a number of bifaces in various stages of manufacture. They believe that the site was occupied in the spring and summer by small groups of hunters and gatherers. Faunal analysis (Kobori 1979c) indicated primary reliance on mountain sheep, although deer and cottontail were also important. Other aspects of the Ezra's Retreat project included an experiment to determine the effect of screen mesh size in recovery of faunal data (Kobori 1979b), analysis of a human burial (Kobori 1979a), and a suggested method of distinguishing Elko Corner Notched from Elko Eared projectile points (Spencer 1979).

Test excavations in Stolen Shelter, which was badly disturbed by illegal excavations, showed that it was used most intensively between A.D. 400 and historic times. Busby et al. (1978) describe artifacts and a fire hearth from this site.

A systematic, total surface collection of 20% of the North Fork Lithic Scatter was taken. Projectile points from this site suggested regular occupation since at least 5000 B.C. (Bard 1976), a finding which is consistent with the geological age of the terrace upon which the North Fork Lithic Scatter is situated (Davis, Bard and Busby 1977). Spencer (1976) used projectile points from the North Fork Lithic Scatter and from Ezra's Retreat in an analysis of projectile manufacture. He pointed out that the way in which a biface is broken often indicates whether it was a preform which failed during manufacture or a finished tool, broken during use.

The Pink Point site was a small single-component open site post-dating A.D. 900. Debitage analysis showed differences between flakes produced by core flaking and those produced during biface reduction (Busby et al. 1978). Other open sites in this area, including chert and obsidian quarries, have been briefly described (Busby, Bard and Spencer 1975; Smith 1977).

Collections and Archive Material

University of California, Berkeley

Lowie Museum - Artifacts collected by Busby, Bard, Kobori, and others.

Nevada State Museum - materials collected at Chimney Creek Reservoir.

Selected References

- | | |
|---|---|
| Bard, J.C. 1976 | L. Spencer 1975 |
| Bard, J.C., C.I. Busby and
L.S. Kobori 1979 | Davis, J.O. 1976 |
| Busby, C.I. 1975 | Davis, J.O., J.C. Bard and C.I.
Busby 1977 |
| Busby, C.I., J.C. Bard, T. Clark,
L.I. Spencer and S. Swezey, 1978 | Kobori, L.S. 1979a, 1979b, 1979c |
| Busby, C.I., J.C. Bard and | Smith, R.C. 1977 |
| | Spencer, L. 1976, 1979 |

32. Winnemucca-Battle Mountain Area Reconnaissance

The Nevada Archeological Survey sponsored a reconnaissance survey in an area north of Winnemucca and Battle Mountain, which was conducted in 1967. A total of 91 archeological sites were recorded. Stephenson and Wilkinson (1969) describe and analyze these sites and the artifacts which were collected from them. The sites are characterized as being relatively homogeneous, even though a considerable time depth (Ca. 2000 B.C. - A.D. 1900) was represented. Stephenson and Wilkinson found sites were most likely to occur adjacent to minor water sources and valley margins. They reinforce Tuohy's (1963) observations that grinding implements are relatively scarce in areas distant from the Humboldt River, suggesting an emphasis on hunting. In such areas, Stephenson and Wilkinson also observed that obsidian is predominant in Paradise Valley, but that in other areas non-obsidian silicates were preferred.

Collections and Archive Material

Nevada State Museum.

Selected References

Stephenson, R.L. and K. Wilkinson 1969

33. Valmy Power Plant

Beginning in 1975, a series of archeological investigations were conducted in connection with Sierra Pacific Power Company's Valmy Power Plant. A series of surveys provided intensive (Class III) inventory data for about seven sections of land along the Humboldt River (Rusco 1975a, 1976; Seelinger 1977). These surveys identified a major set of prehistoric archeological sites subject to direct impact from power plant construction.

Excavation and surface collection began in 1976 at 6Hu629, 26Hu630 and 26Hu631. These three sites were interpreted as multi-component base camps, occupied over the past 7,000 years. Lithic analysis focused on edge angles of utilized edges and on production-related attributes of debitage. Manufacturing processes were found to differ greatly, depending on whether the raw material was obsidian or chert (Davis, Fowler and Rusco 1976).

A second report deals with 26Hu654, 26Hu660, 26Hu1015 and 26Hu1016 (Rusco and Davis 1979). Great Basin stemmed projectile points reflected infrequent use of the area prior to 7,000 years age. The most intensive use in the area was determined to be sometime between 6,000 and 3,000 years age when the Humboldt Concave Base points were made and used. From 3,000 years on, the area was probable used at various times up to Western Shoshone times. Five sites were semi-permanent settlements or base camps and the remaining sites may have been subsidiary to the five. The base camps were found to differ in certain respects from 26Hu629 and 26Hu631 referred to in the previous paragraph.

A third report (Elston et al. 1980) describes three large sites (26Hu634, 26Hu635, and 26Hu644) in detail and a number of smaller ones in general terms. 26Hu635 was determined to date between 4000 and 1000 B.C. Tool manufacture, butchering, hide preparation and seed processing were major activities. 26Hu644 is a surface scatter with two periods of occupation: 11500-8000 B.P. and 6000-3000 B.P. Butchering and processing of big game animals was practiced here. At 26Hu634 dating was a problem and the occupancy was tentatively set at 6000-3000 B.P. and possibly earlier. This site was also related to hunting and butchering. This study represents full mitigation of these sites. Practically no subsurface material was found.

In 1980 Basin Research Associates did a survey for the pipeline into the Valmy Unit #2. All six sites found were isolates and collected (Bard 1980).

Collections and Archive Material

Archeological Survey, Department of Anthropology, University of Nevada,
Reno - Materials collected by Elston

Selected References

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| Bard, J.C. 1980 | Knudson, R. 1979 |
| David, J.O., D.D. Fowler and M.K. Rusco 1976 | Rusco, M.K. 1975a, 1976 |
| | Rusco, M.K. and J.O. Davis 1979 |
| Duffe, D. 1976 | |
| Elston, R.G., J.O. Davis, S. Clerico R. Clerico and A. Becker 1980 | Rusco, M.K. and D.R. Tuohy n.d.
Sellinger, E. 1977 |

34. Sierra Pacific Power Company, Valmy to Mira Loma Transmission Lines

Between 1974 and 1980 Sierra Pacific Power Company proposed a number of power transmission line routes along a corridor between Valmy and Mira Loma, Nevada. Surveys conducted in support of these proposals provide a northeast-southwest trending transect across the Winnemucca District. A major complex of sites was found along the Humboldt River near Oreana, Nevada. Other sites where evidence of habitation was found tended to be well watered locales-- Sacramento Canyon, an unnamed spring along Marble Creek, Kent Spring, and the Humboldt River floodplain near Treaty Hill (Rusco and Seelinger n.d.; Rusco and Seelinger 1974; Busby and Bard 1979; Napton and Greathouse 1979; Ancient Enterprises, Inc. 1980).

On all the surveys, small sites and isolated finds were collected. During the 1974 survey (Rusco and Seelinger n.d.; Rusco and Seelinger 1974), systematic collections were made from larger sites as well, although descriptive and analytical results are not yet available.

During their 1978 survey, Napton and Greathouse (1979) made controlled surface collections and test excavations at several sites along the utility corridor. For most sites, analysis consisted of tabulating typable projectile points and flake types, plotting length-width ratios for various flake and raw material types, and characterizing density on the site. Little or no interpretation was attempted. One site, 26Pe332 in Sacramento Canyon, was considered in more detail however. Of the 35 typable projectile points from this site, 16 were Desert Side-Notched. Projectile points strongly dominated the assemblage, only five artifacts (inclusive of utilized flakes) were found which were not projectile points. The site was interpreted as a hunting camp. Lithic analysis directed toward an understanding of lithic reduction stages was completed on a sample of the debitage from 26Pe332, and trace elements in 28 obsidian flakes were identified.

Collections and Archive Material

Nevada State Museum - Collections by Rusco and Seelinger (n.d., 1974) and Busby and Bard (1979).

California State College, Stanislaus, Institute for Archeological Research - Collections by Napton and Greathouse (1979).

Selected References

Ancient Enterprises, Inc. 1980
Busby, C.I. and J.C. Bard 1979

Napton, L.K. and E.A. Greathouse 1979
Rusco, M.K. and E. Seelinger 1974, n.d.

35. Northern Nevada Natural Gas Pipeline

In 1962 Don Tuohy of the Nevada State Museum, with a small crew, surveyed 350 miles of proposed pipeline between Mountain Home, Idaho and Reno, Nevada. This project was one of the earliest impact-oriented surveys in Nevada. In the early 1960s much of northern Nevada and southern Idaho was archeologically unknown. Moreover, what little survey had been done was based on intuition. No systematic survey data were available.

In the course of this survey, Tuohy (1963) documented 113 archeological sites, including open sites, rockshelters, petroglyphs, and stone features. Projectile point types suggested some sites might be as old as 5000 B.C., but that most date to between 2200 B.C. and A.D. 1850 or 1900. Tuohy notes the high proportion of open hunting sites and the dearth of sites which reflect dependence on plant foods.

Collections and Archive Material

Nevada State Museum.

Selected References

Tuohy, D.R. 1963

36. University of California Rock Art Survey

R.F. Heizer, M.A. Baumhoff and others systematically documented a number of rock art sites including several in the Winnemucca District in 1958 and 1959. This work led to a classification of rock art based primarily on technique of production and secondarily based on stylistic criteria. By considering the contexts in which rock art occurred, Heizer and Baumhoff (1959, 1962) were able to argue strongly that rock art was a form of hunting magic.

Collections and Archive Material

University of California, Berkeley

Selected References

Heizer, R.F. and M.A. Baumhoff 1959, 1962
Nissen, K.M. 1981

37. Painted Cave

In 1978 the Bureau of Land Management contracted with Basin Research Associates to conduct a test excavation at Painted Cave with a view to developing a protection plan for this site.

The results of this work (Bard et al. 1980) indicated that the shelter had been used as a seasonally-occupied camp in late archaic times and that the pictographs covering the shelter walls were contemporary with the occupation. On the basis of the shelter's location near a possible game trail and the presence of projectile points among the finds, the excavators suggest hunting was one of the activities practiced by the inhabitants of the shelter. They note that the excavation thus supports Heizer and Baumhoff's (1962) hunting magic hypothesis for Great Basin rock art in general.

Collections and Archive Material

Lowie Museum - University of California, Berkeley.

Selected References

Bard, J.C., C.I. Busby and L.S. Kobori, 1978a, 1978b, 1980	Heizer, R.F. and M.A. Baumhoff 1959, 1962
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38. Sou Hot Springs

Sou Hot Springs are at the southern tip of the Sou Hills which are located between the Stillwater Range and the Tobin Range.

The only field work done for cultural resources in this area has been related to geothermal activities. Two sites recorded by BLM personnel are of note. One of these has four stone circles which are possible hunting blinds although their location is atypical. The other site of note is a lithic scatter concentrated around Sou Hot Springs. Debitage is quite dense and this site may have depth.

Collections and Archive Material

Nevada State Museum.

Selected References

Roney, J.R. 1977a

39. Inventories Along the Humboldt River

A strong interest in geothermal leasing along the Humboldt River has prompted a series of extensive prelease clearances which were done by Bureau of Land Management archeologists. In 1976 Nancy Botti began inventories in the Colado-Lovelock area. Two archaeological sites were recommended to be preserved in situ.

The following year Bob York worked in the Humboldt House area and Dan Brooks in the Rye Patch area. York observed". . . that materials appeared to be almost exclusively associated with dunes back from the wave-cut bluffs of the Pitt-Taylor Reservoir shore . . . more closely associated with the 4,160' contour" York (1977) recommended further work before drawing conclusions on the chronology or settlement pattern of these sites. Brooks (1977d) recorded 19 sites, ten of which were isolated finds and the remaining nine clustered around small seeps. Brooks interpreted these sites in terms of the seasonal round of resource exploitation.

Interest in prelease clearances waned until 1980 when three more clearances were done. Regina Smith (1980a) reported on 17 sites during her survey. Only one large site was recorded. This site was of interest since aboriginal materials were found, along with charred and broken bone fragments of domestic cow. Since the emigrant trail is known to have passed through the area nearby, this site may be a contact site involving Indian rustling of, or trading for, white emigrants' livestock. John Roney's (1980a) report on an area near Mill City also reports possible White/Indian contact sites. Other aboriginal sites included impressive lithic scatters in the sand dunes on the edge of the highest terraces overlooking the Humboldt River with no lithic material found beyond 1/2 mile from the river. Some of these sites had midden deposits and one a human skull. The skull was determined to be prehistoric but in a secondary context. These sites were interpreted as comparable in importance to the National Register District at Rye Patch Reservoir.

Another extensive inventory conducted that year was near the Salinas Ranch (Roney 1980d). Again, large lithic scatters occurred along the edge of the river on the highest terraces. Like the Mill City sites, these included various artifacts: projectile points, bifaces, unifaces, knives, drills, cores, shell beads, ground stone and hearths.

In 1981 the results of another prelease clearance (Pedrick 1981) at Rye Patch Reservoir duplicated those of the Mill City and Salinas Ranch Surveys.

None of these sites described above have been tested; however a series of intensive field sessions (the Humboldt Project) have been conducted at Rye Patch Reservoir and reported on by Rusco et al. (1979a).

Collections and Archive Material

Nevada State Museum

Selected References

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|------------------------|-----------------------------|
| Botti, N. 1976e | Smith, R. 1980a |
| Brooks, D. 1977d | York, R. 1977 |
| Pedrick, K. 1981 | Rusco, M.K., J.O. Davis and |
| Roney, J. 1980a, 1980d | J.R. Firby 1979a |

40. The Humboldt Project

In 1975 an archeological survey by the Nevada State Museum was done on the shoreline of Rye Patch Reservoir for the Bureau of Reclamation. The inventory was undertaken in order to identify cultural resources that would be submerged by the raising of the present high water level of the reservoir. This reconnaissance resulted in the discovery of 85 archeological and historical sites and two paleontological sites. Recommendations consisted of mitigation measures and no testing was done at this time.

Phase II of this five-phase project began in 1976 with the aim of evaluating the significance of sites vulnerable to disturbance. Collections and test excavations began, in addition to mapping, photography and recordation of associated landforms and vegetation.

Follow-up work during Phase III included inventory and evaluation of sites in the reservoir drawdown basin, as well as further testing of seven sites that were eventually placed on the National Register as an archeological district. One paleontological site also received special attention in order to verify its possible association with a scraper. The association was not verified.

At this time a research design was prepared for Phase IV of the Humboldt project. The Phase III report covers the archeological data recovered from sites 27Pe366, 26Pe428/425, 26Pe450, 26Pe670, 26Pe680, 26Pe681, and 26Pe699 (Rusco et. al. 1979a; Dansie 1979b). Site 26Pe670 contained Great Basin Stemmed projectile points along with materials from later occupation.

In summary, these open stratified sites were determined to be of the late Quaternary (ca. 3350 B.C. to A.D. 1100). Features consist of discontinuous middens and hearths. Hand excavation and collection recovered numerous artifacts, as well as bone, shell, and charred plant fragments. Inventories of the drawdown area revealed at least 30 additional sites. Intersite variations were observed and applied toward the Phase IV research design.

The archeological investigations were combined with the description and discussion of Quaternary geology and its relationship to the archeology and paleontology. The results from the paleontological site are also discussed and a preliminary report on the faunal analysis of unworked bone is appended.

Phase IV will provide a summary of the previous work along with the recovered data. This work is currently in preparation.

Collections and Archive Material

Nevada State Museum

Selected References

Dansie, A. 1979a, 1979b
Davis, J.O. 1977b
Lyneis, M.M. 1979
Rusco, M.K. 1975b, 1977

Rusco, M.K., J.O. Davis and
J.R. Firby 1979a, 1979b
Rusco, M.K., J.O. Davis, A.
Jensen and E. Seelinger 1977

RESEARCH POTENTIAL AND MANAGEMENT

Research Potential

The research potential of cultural resources is defined in terms of their direct or indirect potential contribution to our knowledge of the prehistoric past. Although the Great Basin lacks impressive architectural sites and elaborate material culture, it does possess unique research values. In comparison with other areas, the cultural history of the western Great Basin is relatively simple. Variables affecting the cultural process are comparatively limited, facilitating detailed exploration of cultural processes. For this reason the contribution of western Great Basin archeology to general anthropological theory is potentially very great, particularly considering the current scholarly interest in hunting and gathering societies worldwide.

A precondition for reconstruction and interpretation of the prehistory of a given region is the establishment of cultural sequences based on variation of artifact types through time and the determination of the spatial range of these types.

A chronological sequence of diagnostic projectile points has been established for the High Rock country (#21) and can be applied to open surface sites there and elsewhere in the District. Excavation of other stratified sites (e.g. caves and rock shelters) and the acquisition thereby of samples suitable for radiocarbon dating, is desirable, however as a means of confirming or refining the High Rock sequence.

Once the basic chronological questions have been answered, however, more sophisticated problems suggest themselves. Emphasis shifts from description of cultural variation to explanations of its causes.

One such problem is the nature and timing of post-Pleistocene climatic change in the Great Basin and the way in which this change affected human adaptation to the environment. A general climatic sequence has, in fact, been formulated (Chapter II, *infra*) and is widely accepted, but it needs refinement and its effects on human adaptations need to be explored in detail. Knowledge of the adaptation of human populations to recurrent lake bodies in the Black Rock Desert is particularly needed. Additional data are also required on the differential effects of a given climatic regime in different habitat types within the Basin, with, again, a view to elucidating the different ways in which populations adapted to this variability. Some work on these problems has already taken place in Winnemucca District. The Lovelock Cave (#1) and High Rock (#21) excavations are examples of such work and have provided data on marshland and dry country adaptations respectively. Completion of the studies currently underway in the Rye Patch Archeological District (#40) may be expected to yield information on yet a third kind of adaptation--to riverine conditions. The full range of adaptations in the District is almost certainly still to be established, however, and a good deal of further work will probably be required to achieve this goal.

Another group of problems concerns land use patterning. On the macro level, this patterning has its archeological expressions in the distribution of sites over the modern landscape and, on the micro, in the numbers and distribution of discrete activity areas within sites. Attempts to deal with problems of this kind, particularly on the macro level, have dominated much contract and project-related archeology in recent years and this trend will probably continue.

For the potential of the District's cultural resources for contributing to the solution of basic research problems to be realized, two conditions must be met: sites must first be found and recorded and, once this is done, must be preserved for scientific investigation.

Basic inventory of all the major habitat types must continue as, until such inventory is complete, data on the full range of prehistoric exploitation of the environment will remain unavailable. Studies of settlement patterning, in particular, are dependent on large scientifically valid statistical samples which can only be acquired through systematic inventory.

Environmental reconstruction and chronological studies rely heavily on data recovered from stratified contexts and for this reason all such sites should be protected from disturbance until such time as they can be scientifically examined. Studies of land use patterning, on the other hand, are statistically based, and require for successful prosecution adequate samples of the full range of site types. From this point of view, the small, apparently trivial, site is as important as the large conspicuous one, and its loss, as serious a matter. Intra-site patterning is especially fragile, and will be obliterated or blurred by any force or activity (e.g. arrowhead collecting) which selectively damages, conceals or destroys particular categories of artifacts or features. Arrowhead collecting also, of course, removes valuable dating evidence.

Anomalous site types, such as pebble mounds (# 10) are, of course, worthy of full protection until such time as their data and function are understood. The same applies to rock art sites (#18 and 36); a quasi-subsistence function has been claimed for rock art (Heizer and Baumhoff 1962) but a great deal of basic research needs to be done before its role, or roles, in prehistoric lifeways can be known with any certainty. The dating of much rock art is also very uncertain.

This discussion of research potential is not exhaustive. Rather it is intended to show directions which future research in the District may take. Two general considerations also have an important bearing on research potential. Cultural resources are non-renewable. All of the information we will ever have about prehistoric and early historic adaptations is present today and if destroyed, can never be replaced. Any erosion of that data base, therefore, is cumulative and irreversible. A second consideration involves the desirability of preservation, rather than salvage or mitigation. Any investigation which involves collection or excavation inevitably results in loss of information. Archeology is a relatively young discipline and new research tools, methods, and techniques are evolving rapidly. Consequently, future information potential of cultural resource sites is greater than present potential. It is desirable, therefore, to preserve cultural sites until research needs require their investigation. Salvage should be undertaken only as a last resort.

Educational and Interpretive Potential

Many prehistoric sites in the District have educational and interpretive value. Lovelock Cave, especially, would be a fine example for interpretive use. Minimally, a protective sign should be placed at the cave. The site may also warrant a protective fence, or an information pamphlet. A slide show about the cave and what we have learned from it would have great educational value. Points covered would include the cave itself, the artifacts found in it, diorama scenes of lifeways and associated sites, the lake environment, food procurement and processing, and period of occupation. A study kit such as that developed by the Carson City BLM District would also be of great value and could be used by teachers with or without a previously recorded discussion on the same topics as a slide show. Note should be made that the Humboldt County Museum houses a collection of artifacts from Lovelock Cave. A larger collection could possibly be acquired for display locally.

Other educational opportunities involve artifacts collected by the BLM during cultural resource projects. Projectile points, and other tools curated by the Nevada State Museum, may be used for archeological displays at the District office or elsewhere.

An educational pamphlet on conservation of cultural resource values might be in order, or even newspaper articles.

Rock art is a particularly attractive cultural resource. Sites should be signed, and a photo exhibit should be assembled to display rock art of sites that are inaccessible to much of the public.

Cultural resource sites within the District which should be considered for interpretation include but are not limited to:

Granite Creek Petroglyphs	AR27-02-02
Leonard Creek Rockshelter	
Petroglyphs at Crossroads Rockshelter	
Painted Cave	
Pole Canyon Petroglyphs	
Eugene Mountain Petroglyphs	
Lovelock Cave	AR27-02-01
Humboldt Sink	
Ocala Cave	CrNV-02-1195
Leonard Rockshelter	AR27-02-17
Granite Point	CrNV-02-1338
Humboldt Cave	AR27-02-04
Falcon Hill Sites	AR27-02-269
Winnemucca Lake Caves	CrNV-02-1307-1315
Sadmat Site	CrNV-02-2233
Granite Creek Petroglyphs	AR27-02-02
Silent Snake Springs	AR27-02-03
Jimmy Rodgers Creek Alignment	CrNV-02-1462
Long Rock Alignment	CrNV-02-1464
Smoky Creek Cave	AR27-02-185
Little Smoky Rockshelter	AR27-02-183
Summit Twin Spring	CrNV-02-584
Dansie Site	AR27-02-137
Barrel Spring	CrNV-02-1782
Paiute Creek Battleground	
Kelly Creek Battleground	
Ezra's Retreat	
Onion Valley Archeological Sites	
Chimney Creek Reservoir Site and those on the North Fork of the Little Humboldt	

Several of the excellent interpretive methods outlined in Chapter IV, infra are also applicable to many of these sites.

Management Recommendations

In order to continue scientific research a full range of archeological sites must be identified and preserved.

As argued above, management of cultural resources should include active exploitation of their educational potential as well as more preservation. As also argued above, research should follow a studied research design rather than the reactionary tactics of salvage archeology. Studies such as regional overviews could facilitate better management decisions by expanding the present inventory and providing a better idea of the range of sites in the District.

The most obvious method of conservation of the resource data base is avoidance. Projects should not be constructed on open surface sites when there are other viable solutions. Lithic scatters are becoming of increasing importance in lithic analyses, providing the basis for studies of such diverse problems as the uses of utilized flakes, chipping techniques, reconstruction of lithic debris to determine the types of artifacts produced, trace element analyses, distribution of materials and spatial interrelations within sites. Many of these studies are in their infancy and a suitable sample of sites should be preserved against the time when better analytic tools are developed. In addition, the obsidian trace element library should be completed for future use.

One type of extremely fragile site, the particularly vulnerable to surface disturbance, is "pebble mound". Since the function of these sites is not known, care should be taken to preserve them until their significance is fully understood. Surface disturbance to these sites could destroy their context as well as the physical evidence. A few sites which warrant special attention:

CrNV-02-842,841,840	Parran Site (inclusive)	5 acres
CrNV-02-1889	Upsal Site	160 acres*
CrNV-02-2233	Sadmat Site	10 acres*
CrNV-02-1920	Peter Ting Sr. Site	20 acres
CrNV-02-584	Summit Twin Springs Blinds	25 acres
CrNV-02-127	North Fork Lithic Scatter	23 acres

* only partially on public land

Caves are another valuable source of data and are particularly vulnerable to vandalism. Conservation of caves is a difficult matter. Some caves or rockshelters are now being managed by excavating a part of the deposit and conserving the rest until excavation methods and new analytical techniques have been developed.

A reliable monitor and patrol system should be set up. This program could cover a variety of problems. Visit to sites in the course of protective monitoring would provide an excellent opportunity to photo document many sites, to develop a photo exhibit of certain types of sites (e.g., rock art display), to fully record sites which have never been completely recorded and to determine significance of unrated cultural resources. Additionally, experimental stations might be set up to determine deterioration trends and to develop reliable preventive stabilization methods. Deterioration of petroglyphs could be documented and protection and stabilization methods developed. Rubbings and casts might be alternatives to protection and stabilization of sites where the latter are unlikely to be affected. All S1 and S2 cultural resources should be considered for this program.

Along with a monitor and patrol program, positive protection signs should be posted at the following sites and at others as they are identified;

Trinity	CrNV-02-449	Lovelock Cave	AR27-02-01
Mazuma	CrNV-02-451	Humboldt City	CrNV-02-394
Tunnel	CrNV-02-452	Rochester	CrNV-02-402
Vernon	CrNV-02-455	Star City	CrNV-02-406
Seven Troughs	CrNV-02-456	Long Rock Alignment	CrNV-02-1464
Rosebud	CrNV-02-459	CrNV-02-1465	
Placeritas	CrNV-02-461	Granite Creek Petroglyphs	AR27-02-02
CrNV-02-852		Silent Snake Springs	AR27-02-03
Ocala Cave	AR27-02-04	Hardin City	HS27-02-09
CrNV-02-1911		Painted Rock	AR27-06-09
Pole Canyon		Ezra's Retreat	
Petroglyphs			
Pole Canyon			
Rockshelter			

As the sources of deterioration are identified an effort should be made to seek out preservation and stabilization methods to arrest physical destruction. Summit Twin Springs is one example of a rapidly deteriorating site which will be monitored after construction work is completed.

Another management option is to designate highly significant sites as areas of critical environmental concern. Only one site in the District is currently being considered for this category.

Abbreviations used:

AAnt	American Antiquity
BLM	Bureau of Land Management
- CR	Cultural Report (unpublished manuscript on file at BLM Winnemucca District Office).
CARD	Center for Archaeological Research at Davis, University of California, Davis.
- P	Publication
DRI	Desert Research Institute, University of Nevada, Reno
- PSS	Publications in the Social Sciences
- TR	Technical Report
- TRP	Technical Report Series S-H Social Sciences and Humanities Publications.
KAS	Kroeber Anthropological Society
- P	Papers
- SP	Special Publication
NAS	Nevada Archaeological Survey, University of Nevada, Reno
- R	Reporter
- RP	Research Paper
NSM	Nevada State Museum, Carson City
- AP	Anthropological Paper
- ASR	Archaeological Services Report
UC	University of California, Berkeley
- AR	Anthropological Records
- CARF	Contributions, Archaeological Research Facility
- PAAE	Publications, American Archaeology and Ethnology
UCAS	University of California Archaeological Survey
- R	Reports

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CHAPTER IV: HISTORY

CHRONOLOGICAL LISTING OF HISTORIC EVENTS
IN AND AFFECTING THE WINNEMUCCA DISTRICT

<u>YEAR</u>	<u>EVENT</u>
1776	Spanish expeditions of Garces and Dominguez Escalante make first white penetration of Great Basin, but do not enter study zone. District lands are part of Spanish claim.
1821	Mexico wins independence from Spain and district lands come under the jurisdiction of the new Republic of Mexico.
1827	First white trapper, American mountain man Jedediah Smith, passes through the Great Basin south of the study zone.
1828	In late October, Peter Skene Ogden of British trapping firm, Hudson's Bay Company, leads first party of Caucasians into the District near Denio and discovers the Humboldt River. First known presence of "modern" horses in District. Trapping represents first white exploitation of natural resources.
1829	Ogden Party returns to District in spring and discovers terminus of Humboldt River at Humboldt Sink. First reported hostile encounter between whites and Native Americans in the District occurs, but armed conflict is avoided. On third visit in fall, Ogden party travels beyond Humboldt Sink to California, establishing general route later used by most California bound emigrants.
1831	John Work's Hudson's Bay Company trapping expedition travels along Humboldt and Little Humboldt Rivers.
1833	The Joseph Walker trapping party, a detachment of the Bonneville Expedition, are first recorded Americans to enter District. They become first white men to cross the Sierras from east to west, blazing the trail over the range used by future emigrant travel. First Indian/White armed conflict takes place at Humboldt Sink.
1841	Bidwell-Bartleson Party are first emigrants to travel along Humboldt River.
1840s	First cattle and sheep in District brought along emigrant trails and first livestock grazing occurs along these routes.
1843	Main contingent of Chiles-Walker party is second emigrant group to travel along Humboldt River.
1843-44	John C. Fremont leads first federally-sponsored exploring party into the District through High Rock Canyon on December 31, 1843. They make first white explorations of Black Rock Desert Area and discover Black Rock Springs, Great Boiling Springs at Gerlach and Pyramid Lake.

- 1844 Stevens-Murphy emigrant party establish the Truckee River Route and become the first emigrants to cross the Sierras with wagons.
- 1845 Walker-Talbot-Kern party, a contingent of the Fremont Party, pass along Humboldt River. Fremont names Humboldt River at end of journey.
- 1846 Donner Party travel through District following Humboldt River and Truckee River Routes and spend a disastrous winter stranded in the Sierras in '46-'47.
- Applegate Party blaze cutoff from Humboldt Route through the Black Rock Desert to Oregon and use of it by Oregon-bound travelers commences.
- 1847-58 District lands included in Mormon-claimed free and independent state of Deseret.
- 1848 Treaty of Guadalupe Hidalgo signed and District lands become property of U. S. Government after U. S. victory in Mexican War. District lands are part of California.
- Peter Lassen opens cutoff from Applegate Trail to gold fields of California.
- 1849 The discovery of gold in California in 1848 stimulates massive migration along emigrant routes. This results in range depletion, water pollution and confiscation of Indian food resources along trail routes.
- James Hardin discovers first precious mineral in District in the Black Rock Desert.
- 1850-61 District lands are included in Territory of Utah.
- 1850s Trading stations develop along the emigrant routes bringing first minor settlement, cultivation, and livestock raising to District.
- 1851-54 and 1858-59 Chorpenning-Woodward "Jackass Mail" service from Salt Lake City to Sacramento passes along the Humboldt River.
- 1852 Nobles cutoff from Black Rock Springs through Smoke Creek Desert to Susanville established.
- First sheep drive led by Dick Wooton passes along Humboldt River.
- 1852-1910 Immense sheep drives pass through District, grazing along routes.
1852-65 sheep drives westward bound for gold camps
1865-1910 sheep trailed east to mid-western markets
- 1853 Kit Carson sheep drive passes through District.
- Trading post established at Winnemucca (French Ford).

- 1856 Discovery of Trego Hot Springs shortens and makes easier journey along Nobles Route through Black Rock Desert area.
- 1859-60 Landers survey and redevelopment of Nobles Route portion of Honey Lake Wagon Road.
- 1860 Silver discovered in the Humboldts.
Pyramid Lake Battle.
- 1860-70 Numerous silver strikes in the District and heavy prospecting stimulates settlement and commercial and agricultural development in vicinity of mines and mills and transportation routes develop. Widespread impacts to Indians' lands and food base lead to resistance and raiding by some Indians, which hamper white settlement. Armed conflicts with whites and establishment of military forts during mid 1860s result.
- 1861 Nevada becomes a territory. Humboldt, Lake (Roop), and Churchill are three of the original counties.
Samuel Clemens (Mark Twain) prospects and resides in Unionville.
First cultivation and first irrigation ditches in Lovelock Valley.
- 1862 Homestead Act passed.
Idaho Wagon Route opened incorporating parts of Nobles Route. Also connected with Humboldt Range boomtowns during '60s and early '70s.
First major use of District lands for livestock grazing (other than along trails) when drought in California causes stockmen to drive herds into Nevada to graze for the winter. Resident cattle operations begin in 1860s and some sheep brought in to be fattened for sale to mining camps.
- 1863 Discovery of Paradise Valley.
- 1864 First agricultural cultivation in Paradise Valley.
- Mid-1860s Thousands of longhorns arrive in Nevada from Texas.
- 1864-5 Cutler and Westerfield Pony Express (Humboldt Express Company) runs between Star City and Idaho gold fields.
- 1865-70 Hill Beachy Railroad Stage Lines runs through District to Silver City, Idaho. Cutoff from Oreana bypassing Winnemucca is used 1867-68.
- 1867-72 King Survey of Fortieth Parallel country.
- 1868 G. A. Curtis opens stage line from Winnemucca to Paradise Valley.
Completion of Central Pacific Railroad between Winnemucca and Sacramento.

- 1869 Joining of Central Pacific and Union Pacific Railroad at Promontory, Utah, May 10. Overland Telegraph built adjacent to railroad. Availability of outside markets causes growth of livestock industry and development of Winnemucca as a shipping center.
- 1868-69 Many Chinese work on Central Pacific Railroad and after its completion settle along route.
- 1869-1940s Cattle drives pass through District on way to railhead at Winnemucca.
- 1870s California sheep operators bring their herds to District for summer grazing and large year-round sheep operations begin to be established as well.
- 1877 Desert Entry Act passed.
- 1878-90s Gold mining boom in northern Paradise Valley area.
- 1880s Establishment of Indian reservation in District. Sarah Winnemucca Hopkins pleads for better conditions for Paiutes.
Many Basque shepherds enter the District.
- 1885 Wild horse herds present in Nevada from this date forward.
- 1889-90 Severe winter following drought year causes drastic losses in agricultural industries (particularly cattle industry). Winter feeding of cattle becomes prevalent from this date on and hay production increases to meet the demand.
- 1893 Repeal of Sherman Silver Act causes decline of silver mining in Nevada.
- 1898 Boer and Spanish American Wars create demand for horses to be used as military mounts.
- 1899 Central Pacific sold out to Southern Pacific.
- Early 1900s Maximum number of sheep, cattle, and horses cause range depletion.
Mining boom causes activity in new and old mines throughout the District.
- 1900 On September 19th Butch Cassidy (the "Sundance Kid") and Will Carver held up the Winnemucca First National Bank.
- 1902 Arid Lands Reclamation Act passed.
Southern Pacific moves old railroad route through Forty-Mile Desert from old course following Truckee River Route to new course following Carson River Route.

- 1904 Overland Telegraph route moves to parallel new Southern Pacific tracks through Forty-Mile Desert.
- 1908 Western Pacific Railroad builds transcontinental line through Winnemucca.
- 1911 Last recorded Indian-white conflict in District. Band led by Shoshone Mike Dagget kills stockmen at Little High Rock Canyon and posse kills or captures all Indians at Rabbit Creek.
- Santa Rosa National Forest created, thereby eliminating sheep grazing in that area.
- 1913-18 Nevada Short-Line Railroad in operation between Oreana and Rochester.
- 1914-18 World War I stimulates agriculture and creates demand for horses as military mounts.
- 1917 Interstate 80 (State Route 1, U. S. 1., U. S. 40) established.
- 1929-32 Stock market crash and unfavorable climatic conditions result in drastic drop in all agricultural product prices and many stockmen go bankrupt.
- 1930s Mining industry booms.
- 1934 Beginning of canned pet food industry which results in large scale harvesting of wild horses.
- Passage of Taylor Grazing Act results in beginnings of range management, creation of Federal Grazing Service, end of homesteading on range lands, and ultimately contributes to diminished number of sheep operators in Winnemucca District.
- 1936 Herbert Hoover visits Jumbo Mine and stays at Jungo.
- 1937 Construction of Rye Patch Dam.
- 1940s World War II stimulates agricultural production. Labor shortages result in recruiting of Mexican Nationals as farm hands, and in machines replacing horse drawn equipment.
- 1946 Grazing Service and General Lands Office joined to form Bureau of Land Management.
- 1951-56 Government tungsten purchasing program stimulates growth in mining industry.

EXPLORATION

The territory which today comprises the Winnemucca District of the BLM was not explored until quite late in this nation's history. The lands administered by the District lie within the large area of internal drainage known as the "Great Basin" which is located between the Wasatch Range in Central Utah and the Sierra Nevadas in California. The Great Basin includes most of the present State of Nevada as well as large parts of California, Oregon, and Utah and small portions of Idaho and Wyoming.

For many years the high surrounding mountain ranges and vast deserts of this region discouraged exploring parties from entering it. By the mid-18th century the Great Basin was the last large unexplored portion of the North American continent except for the Arctic North. The absence of concrete information concerning this region spawned wild tales of inland waterways and magnificent Indian Kingdoms.

Although most of the Great Basin, including Nevada, was part of the territory claimed by Spain, it was not until the late 18th century that it was finally penetrated by Spanish explorers who were searching for an inland supply route from New Mexico to California. In 1776 both the Garces and the Dominguez-Escalante expeditions passed through the eastern and southern edges of the Great Basin but did not enter the study zone. Since no suitable transportation route nor Indians laden with precious metals were found, further exploration of the Great Basin was not pursued by the Spanish. There is no record of any Spanish explorer ever setting foot on the lands of the Winnemucca District (Cline 1963:ix, 3, 35, 43-49).

Trapping Expeditions

The popularity of beaverskin hats and coats in Europe and eastern America was influential in bringing the first known white men into the Winnemucca District. In late October of 1828 Peter Skene Ogden of the British firm, Hudson's Bay Company, led a party of trappers into Nevada, entering the state near the present-day town of Denio. In quest of beaver pelts, Ogden's "Fifth Snake Country Expedition" party apparently traveled along the Quinn River, crossed over to the Little Humboldt River, and followed it to the Humboldt River. Ogden's records indicate that he and his men reached the Humboldt River at a point near present-day Winnemucca on November 9, 1828.

Ogden's party were the first Caucasians to record the Humboldt River. Ogden named it the Unknown River because the course and source of the waterway were unknown to him at this time. The name was soon changed to Mary's River in honor of the Indian wife of one of the trappers. It also was referred to by some as Ogden's River and by others as Paul's River because a trapper named Joseph Paul died along its banks near present-day Carlin (Cline 1963:28, 115-118). Ogden described his first impressions of the Humboldt as follows:

". . . a fine large stream apparently well lined with willows was in sight. . . I made all speed to meet it and the first thing that presented itself was a Beaver House apparently well stocked; a most pleasant sight to me and I hope it will repay us for all the trouble and anxiety it has caused me to reach it."
(Cline 1963:116)

Ogden's party trapped beaver in the Winnemucca vicinity and then traveled eastward along the Humboldt to their winter quarters near the Great Salt Lake. The expedition returned again in the spring of 1829 and followed the Humboldt River to its terminus at Humboldt Lake. On his third and last visit to this area in the fall of 1829 Ogden returned to Humboldt Lake and led his party to the Owens Valley via the Carson Sink, the Walker River, and Walker Lake (Cline 1963:117-118, 122-127).

The first and second visits of the Ogden party to the District lands were included in the Fifth Snake Country Expedition while the third was part of the Sixth Snake Country Expedition. John Work, who succeeded Ogden as brigade leader, led another Snake Country Expedition along the Humboldt and Little Humboldt Rivers in 1831. Trapping efforts by his party were frustrated, however, by the high water level of the Humboldt and by large clouds of mosquitos. Although beaver communities were scarce after the initial years of heavy trapping, Hudson's Bay Company continued to send trapping parties into the Great Basin until 1846 (Cline 1963:127-131).

Although the beaver pelts in themselves had provided a monetary incentive for the Snake Country expeditions, the Hudson's Bay Company was also motivated by political considerations. The Oregon Country, which included territory north of New Spain and west of the crest of the Rockies to the pacific, had been explored by both the United States and Great Britain at approximately the same time in the late 1700s. Dispute over possession of this territory had been temporarily settled by the two countries agreeing to joint occupation of the Oregon Country until a boundary decision could be reached. However, it had been an uneasy peace with both countries desiring more of the disputed territory than the other was willing to yield.

Since the attainment of furs was the main motivation for American westward expansion at that time, the British had hoped to discourage American trappers and thus retain possession of the northwest coast by trapping out the interior of western North America. This effort came to be known as the "scorched earth" policy. Although the British did eventually succeed in controlling the northwestern fur trade, and turned "parts of the Great Basin into a virtual fur desert," they failed in their attempt to obtain complete possession of the Oregon Country. What the British had not counted on was the flood of American settlers which poured into the Pacific Northwest via the Oregon Trail during the early 1840s. In 1847 the boundary dispute was resolved with the U. S. coming into possession of all the territory south of the 49th parallel (Stegner 1979:42-56; Cline 1963: 89-90, 131).

In 1833 the party of trappers led by Joseph Walker traveled along the Humboldt River which they christened the "Barren River," a name which they felt aptly reflected the nature of the countryside they were passing through. The party

experienced problems with the Indians stealing traps from along the banks of the Humboldt River and a battle at Humboldt Sink ensued which left 25 to 30 Indians dead. Proceeding from the Humboldt Sink through the Carson Sink, Walker followed a route similar to that taken by Ogden in the fall of 1829. However, unlike Ogden's party, Walker's expedition crossed the Sierras, and became the first white men to cross the range from east to west. They made their return trip by way of the Humboldt River the following year (Cline 1963:172-173; Bard et al 1981:14).

Although fur trapping continued in the area for several years more, by Walker's time it had been fairly well trapped out. The scarcity of beaver and a shift in fashion from beaverskin hats to silk hats combined to end major trapping endeavors by the early 1840s (Stegner 1979:48).

The arrival of Ogden in 1828 marked the beginning of white exploitation of the natural resources of the District, and most of the beaver were trapped out by the 1840s. The trapping expeditions of the early 1800s were important because they were the first Caucasian explorations in the District and the Great Basin. They were effective in beginning to dispel the mystery which had surrounded this region previously. Also, maps and descriptions of the country traversed as well as location of feasible routes across the Great Basin were very useful to later trail blazers and emigrants. The most significant contribution of Ogden's explorations in the District was the discovery of the Humboldt River which became a major thoroughfare for westward travel in years to come. The Walker-Bonneville expedition route was significant because it blazed an over-land route across the Great Basin and over the Sierra Nevadas. This route was heavily used by emigrants in the succeeding era of westward expansion. Also, the maps which were produced by this expedition established the location of the Humboldt River and showed that it was the best route to travel across the Great Basin to California (Cline 1963:117, 131, 179).

No physical trace of any of the trapping expedition routes through the District remain. However, journal descriptions and maps by expedition members make their general routes through the District traceable.

Federal Surveys

Information about the lands within the Winnemucca District during the late 1820s through the early 1840s was limited to the observations of trappers and emigrants for whom exploration was subordinate to the main purposes of their travels through this area. Lieutenant John C. Fremont's Western Expedition of 1843-44 was the first party of men to enter the district for the sole purpose of exploration. The Fremont Expedition was made up of members of the U. S. Topographic Corps and was the first federally-funded expedition to record the geography and inventory the resources and inhabitants of the study zone.

During the early 1840s the U. S. Government became interested in expanding its territorial boundaries west of the Rockies. Beyond mapping and recording general information about the terrain they passed through, these government expeditions endeavored to locate prospective military and supply routes and to establish relations with the Indians. One of the main objectives of the Fremont expedition

was to search for the fabled Buenaventura River. A popular notion at this time, which map makers reinforced, was the existence within the Great Basin of a navigable river connecting the Atlantic and Pacific Coasts. Discovery of the Buenaventura was expected to furnish a continuous water route to the Orient from the east coast.

John C. Fremont and his party, which included Kit Carson as a guide, departed from Kansas City in May of 1843. Passing through the Rockies, they traveled to the Klamath River via the Great Salt Lake in Utah and Fort Hall on the Snake River. Fremont entered Winnemucca District through High Rock Canyon on December 31, 1843.

Traveling east through High Rock Lake, Fly Canyon, and Mud Meadows, Fremont's party then proceeded south through the Black Rock Desert, and the San Emidio Desert to Pyramid Lake. Black Rock Springs, the "Great Boiling Springs" at present-day Gerlach and Pyramid Lake were discovered by the Fremont Party and the latter two received their names at this time.

In 1845 a contingent of Fremont's exploring party again passed through the District. In November of that year, Fremont divided his party. The larger segment led by Joseph Walker, Theodore Talbot, and Edward Kern headed down the Humboldt to its sink, while Fremont led his party over the Sierras near Truckee. Although Fremont never saw the Humboldt himself, at the end of this expedition he gave the river its present name in honor of Baron von Humboldt, a German naturalist (Mack 1936: 99-100; Bard et al 1981:15).

Fremont firmly established with his explorations that the Buenaventura River did not exist and that the area he had explored was actually an immense area of internal drainage, or as he referred to it: a "Great Basin." Fremont's Report of the Exploring Expedition to the Rocky Mountains, published in 1845, provided a wealth of geographical, geological, cartographic, and botanical information to the government and the public which was valuable during the era of westward migration.

There is no physical trace of the Fremont route but due to Fremont's detailed notes and maps, including latitudinal and longitudinal readings, the route through the District can be accurately pin-pointed. Edward Kern's journal of the 1845 Talbot-Walker segment of the expedition provides detailed descriptions of the Humboldt River and the Humboldt Sink.

From 1859-1860 F. W. Landers was superintendent of an expedition whose purpose was to improve the Nobles¹ Route as a segment of the Honey Lake Wagon Road (See Emigration). A bill granting funds for this work had been passed by Congress previously. Landers and his men mapped in the route, developed the road and expanded several of the springs in the Winnemucca District. Landers' notes on this expedition are on file at the Library of Congress (Jones 1980:10; Jackson 1952:116).

1/ Nobles Route, named after William H. Nobles, is sometimes punctuated Nobles' Route. For the purpose of consistency it will be spelled without an apostrophe in this document except where it is spelled otherwise in publication titles.

With the end of the Civil War, national attention once again became focused on the west. Government-sponsored expeditions such as Fremont's had provided general information about the Great Basin and other parts of the west, and the colorful narratives of trappers and emigrants had added to the growing saga of the west. The territory between the Rocky Mountains and the Sierra Nevadas was soon to become more accessible through the construction of the first transcontinental railroad; and more specific information about the climate, topography, mineral potential, and natural resources of the lands to be traversed by the iron horse was eagerly sought by prospective investors, miners, farmers, and other settlers.

Consequently, four extensive government-sponsored geologic and geographic surveys were undertaken in the west between 1867 and 1879. The surveys of the Wheeler, King, Hayden, and Powell expeditions are known as the "Great Surveys" due to the vast territories explored and the broad scope of the topics investigated. Although the primary object of the expeditions was topographical and geological survey and mapping, the flora, fauna, paleontology, existing settlements and mining ventures as well as many other aspects of the country passed through were investigated. The results of these surveys were published in scholarly informative reports complete with full-color paintings of the traversed territory, black and white technical illustrations, and photographs taken with newly developed equipment (Bartlett 1962:xi-xviii).

Only one of the four surveys, the King Survey, included the lands of the present Winnemucca District. Clarence King, who directed this scientific expedition, was only 25 years old when the survey commenced in 1867. King had just completed four years of work for the California Geological Survey when he conceived the idea of a geological and topographical survey of the fortieth parallel between the Rockies and the Sierras along the planned route of the Central and Union Pacific Railroads. He presented his proposal to the War Department during the winter of 1866-67. Although King was disadvantaged by his youth and his civilian status, so persuasive were his arguments that he was awarded a commission to command the United States Geological Exploration of the Fortieth Parallel (Bartlett 1962:141-144).

The survey was to cover a 100-mile wide swath of land along the 40th parallel between the crest of the Sierra Nevadas and the western slope of the Rocky Mountains. More specifically, this included the territory which extended from the 120th meridian eastward to the 105th meridian and extended north from 39°30' N to 42° N. The routes of the Central and Union Pacific Railroads, which lay within this tract of land, were to be given special attention. The remaining area was included in order to prevent errors in analysis which might have resulted from too small a sample (Bartlett 1962:146, 186, 208). Much of the present Winnemucca District was included in the survey area.

By the spring of 1867 King and a carefully selected team of scientists had commenced their field work. Accompanied by an army escort, the team worked eastward from the Sierra Nevadas to the Humboldt Range following the route of the Central Pacific Railroad. In the Winnemucca District this took them along the natural passageway of the Humboldt River. They mapped and recorded the topography and natural history of this area, giving particular attention to the mountain ranges and sinks in the southern half of the present Winnemucca District. During the first years of field work the entire block of country between 39° 30' N and 41° N was covered in a series of triangular survey transacts (Bartlett 1962:154-171).

While camping at the Humboldt Sink in 1867 the survey party experienced one of the most miserable periods of their entire six years of field study. An extremely wet year had resulted in the sink becoming one great decaying marsh harboring masses of mosquitos which beseiged the men. The vexatious insects were so abundant that they actually extinguished the candles at night as the men tried to write up their field notes.

The drinking and cooking water was extremely sulfurous and had the reek of rotten eggs, while the air was foul smelling due to the decomposing tules (Bartlett 1962:168-172). Ridgeway, the ornithologist, described their campsite at the Humboldt Sink as follows:

The marshes were miles in extent and almost entirely covered by a dense growth of tule . . . the effluvium from the putrid water and decaying vegetation of the marshes was at times sickening, while at night the torments of millions of the most voracious mosquitos added to the horrors of the place (Ridgeway 1877:353).

According to King's account, Ridgeway and all but three of the fifty members of the expedition, were soon struck down by malaria, the outbreak being attributed to the large quantity of stagnant water left by a spring flood. Apparently, miners working in the area were also affected by the disease, causing several mining operations to close down. King was forced to move his camp to Unionville where conditions were much more pleasant and the men were able to convalesce under shelter (Bartlett 1962:167-168).

King also surveyed Winnemucca Lake and Pyramid Lake during 1867 and named Lake Lahontan, the prehistoric lake of which the former were remnants, in honor of Baron deLahontan, an early French explorer of the west (Bartlett 1962:165).

The field work continued five more years, with the expedition pushing eastward to the Rockies as well as returning to some areas already surveyed. During the final year of the survey, 1872, the entire area was revisited and some new territory north of the Humboldt River was surveyed. Six more years were expended in compilation of documents, which were published as they were finished. The project was finally completed in 1879 and the final volume published in 1880 (Bartlett 1962:172, 186).

In addition to the expedition's annual reports, seven thick volumes and an atlas were published as a result of the survey. The titles of the seven volumes are indicative of the broad scope of scientific enquiry undertaken by the King Expeditions: Systematic Geology, Descriptive Geology, Mining Industry, Paleontology and Ornithology, Botany, Microscopic Petrography, and Odontornithes: A Monograph on the Extinct Toothed Birds of North America. The meticulously compiled, beautifully illustrated documents received high laurels for their consistently high standards of academic excellence. As historical reference books, they are invaluable records of the state of natural resources, mineral exploitation, and settlement in the fortieth parallel country during the late 1860s and 1870s. The King Survey, along with the other three "Great Surveys," added greatly to knowledge of western natural history and clarified or dispelled many exaggerated and fallacious beliefs. Scientifically, the King survey was important in establishing a general earth history of the 40th parallel country and in laying the foundations for future study of the natural resources in the area.

Physically, the Fortieth Parallel Survey was also an impressive achievement considering the parched desolate terrain the expedition party spent six field seasons camping in and intensively examining. Of the territory explored in 1867, much of which lay in the Winnemucca District, King stated, "This is in every way the most difficult and dangerous country to campaign in I know of on the continent" (Bartlett 1962:171). The challenges of climate and topography were compounded by poor and inferior rations, water, and forage for livestock as well as by problems with warring bands of Indians. The ornithologist, for example, narrowly missed losing his life to such a hostile band in the vicinity of Pyramid Lake. Only through the efforts of a friendly group of Paiutes was his life saved (Bartlett 1962:173-174).

From a practical point of view, the survey produced an excellent set of topographic and geologic maps, and gave names to a number of previously unnamed geologic and geographic features. The maps were very useful to miners, farmers, transportation route builders and others. Comprehensive information concerning veins of precious metal, existing mines and mining technology, temperature, rainfall, and agricultural feasibility were also useful to those interested in exploitation of the area's resources. The main drawback of the survey from a practical standpoint was that much of the land along the routes of the Central and Union Pacific Railroads was never settled because a large portion of this land was desert and settlers gravitated toward the greener areas of the west.

There are no physical traces of the King Survey but the route is well mapped and described in the survey reports. The U.S.G.S. has continued to the present the topographic and geologic mapping begun by the Great Surveys. The historic survey plats and Master Title Plats filed on microfiche in the BLM Winnemucca District Office include the results of early U.S.G.S. and private surveys. Filed individually by township and range, the documents are useful in verifying the locations of abandoned mining towns, homesteads, and transportation routes.

Additional Reading

Abel 1946	Fletcher 1929	Lander 1860
Cleland 1950	Fulton 1909	Smith 1911
Farquhar 1969	Goetzmann 1966	
Fletcher 1917	Kern 1876	

EMIGRATION

Emigrant travel through the Winnemucca District had commenced even before the Fremont party set foot in this area. During the early 1840s Americans began trickling westward, lured by the glowing accounts of trappers and settlers of the rich lands on the Pacific Coast. The success of Odgen and other trappers in passing through the formidable lands of the Great Basin encouraged westward-bound pioneers to attempt wagon travel through this region, and the Humboldt River eventually developed into a main thoroughfare for emigrant travel. Most California bound travelers, as well as many Oregon bound emigrants, traveled along the Humboldt River and through the Winnemucca District during the 1840s and 50s. The first emigrants to journey through the Great Basin, were the

Bidwell-Bartleson Party in 1841. The next group traveling along the Humboldt was the main contingent of the Chiles-Walker Party in 1843. The party was led by Joseph Walker who had taken practically the same route along the river as leader of a fur trapping expedition ten years earlier. Both of these parties were forced to abandon their wagons before crossing the Sierras, but the Stevens-Murphy party, who also followed the Humboldt River, became the first emigrants to cross the Sierras with wagons in 1844 (Farquhar 1969:44-47).

The Donner Party passed along the Humboldt River in 1846 and experienced the tragic winter of '46-'47 stranded in the Sierras. Circulation of the story of the Donner Party caused travel over the Humboldt Route to be light during the years of 1847 and 1848. However, discovery of gold in California in 1848 resulted in a massive westward migration in 1849. An estimated 25,000 people in the space of approximately six months' time made the trip to California that year. Most of these passed along the Humboldt River part of the "California Trail."

Emigrants started on the overland trail from either Independence, St. Joseph, or Council Bluffs on the Missouri River. The trip to California was about 2,000 miles long and took approximately five months. Timing was of utmost importance since the Sierras had to be crossed before heavy snows made them impassable. However, this usually entailed crossing the Nevada deserts at the hottest and driest part of the year.

Emigrants generally travelled in companies under the leadership of a captain and were led by hired guides. Wagons were usually light farm wagons with canvas covers rather than the heavier Conestogas used on the Oregon Trail. They were pulled by teams of either mules or oxen, preferably the later. A supply of dry goods and preserved foods were packed in the wagons along with as many personal belongings as could be wedged in (Nevada Emigrant Trail Marking Committee (NETMC) 1975:2).

Since mules, oxen, and other livestock needed regular supplies of forage, and they, as well as the emigrants, required frequent water stops, overland trails were established along the best watered routes through the most passable terrain. The Humboldt River was the only waterway which could be followed west through most of Nevada so emigrants travelling the California Trail proceeded along the banks of the muddy meandering river complaining about the sluggish stream and the dull scenery but nonetheless thankful for the water and forage it provided. The main trail entered the northeastern corner of Nevada from Idaho by way of Utah, connected with the Humboldt near present-day Wells and followed the river to its terminus in the Humboldt Sink. This section of the California Trail is referred to as the Humboldt Route. Its course through the District roughly corresponds to that of the present Interstate 80 from east of Valmy to just east of the junction with Highway 95. Emigrants travelled along both sides of the Humboldt River through the District.

After leaving the Big Meadows at Lovelock the trail branched into two trails at the head of Humboldt Lake and were used alternatively, depending on the water level. After circumventing the lake the two trail segments re-united and emigrants proceeded to the Humboldt Dike where they had their choice of going west along the Truckee River Route or south along the Carson River Route. Either way it was 40 miles through deep sands and rugged terrain to fresh

flowing water. This harsh stretch of the trail became known as the Forty-Mile Desert and was the worst ordeal of the entire journey for most emigrants (Bard et al. 1981:17; NETMC 1975:2-3).

The Truckee River Route was the trail established by the Stevens-Murphy party in 1844 and followed by the Donner Party in 1846. The deeper sands, more rugged terrain, and the stigma attached to the trail after the Donner Party disaster made it the less traveled of the two routes. Its sole advantage was the barely potable water provided by Brady Hot Springs in the midst of the journey across the Forty Mile Desert (Bard et al. 1981:16, 19-21). The course of the Truckee River Route through the District is approximately that of Interstate 80 between the junction with Highway 95 and the Truckee River near Wadsworth.

The route taken by most emigrants, the Carson River Route, was basically the route originally travelled by the trapping expeditions of Ogden and Walker and established as an emigrant trail by the Bidwell-Bartleson party of 1841 and the Chiles-Walker party of 1843. The trail crossed the natural dam at the foot of Humboldt Lake, followed the Humboldt Slough and passed through the Forty-Mile Desert to the Carson River. Endeavoring to lighten the burdens of their ever-weakening draft animals and to lessen the risk of becoming stuck in deep sands and boggy areas, emigrants discarded many personal belongings in the desert.

Despite these efforts, many wagons had to be left behind where they had broken down or become entrenched and many animals perished from thirst, starvation and heat exhaustion. By 1850 the remains of approximately 9,000 dead animals and 3,000 wagons marked the Carson River Route through the Forty-Mile Desert. Emigrants also perished along this ghastly hot, waterless, unvegetated stretch of the trail. By 1861 more than 200 emigrants had been buried at the cemetery at Ragtown at the end of the journey across this alkali wasteland (Bard et al. 1981:17-19; NETMC 1975:3). The route of the Carson River Trail through the Winnemucca District roughly corresponds to that of present day Highway 95. It includes the Humboldt Dike Crossing, the Humboldt Slough and part of the Forty-Mile Desert crossing.

Use of the California Trail remained steady through the late 1860s. Travel on the trail was for the most part westbound until the late 1850s when prospectors began to leave the dying California mines for the new strikes in the Humboldt Range and Idaho. Between 1846 and 1855 an estimated 165,000 people followed the California Trail. Travel on the California Trail was minimal after completion of the Central Pacific (which followed the Carson Route) in 1869 (Bard et al. 1981:20; Laxalt 1979:11).

Emigrants following the California Trail also had the option of leaving the Humboldt River at the "Big Bend" (present-day Rye Patch Reservoir) and taking the Applegate-Lassen Trail northwest to California or Oregon. The cutoff was first blazed from Oregon to the California Trail in 1846 by the Applegate brothers. Their main objectives were to provide an escape route for Oregon settlers in case war broke out between the United States and England over possession of the Pacific Northwest and to open an alternate route for Oregon-bound emigrants. The Applegates followed Fremont's route from High Rock Canyon through the Black Rock Desert then blazed the route from the eastern edge of the desert to Rabbit Hole Springs and the Humboldt River.

Later, in 1846, the trail became known as the Applegate-Lassen Trail after Peter Lassen opened a cut-off from the Applegate Trail. Lassen's cutoff branched off the Applegate Trail at Goose Lake in northeastern California, went south to his trading post near present-day Chico and continued on from there to the California goldfields.

Nearly half of the 1849 goldrush traffic traveled the Applegate-Lassen Trail to California. The trail was not really designed to handle the volume of traffic which it received. Thus, emigrants often found the long-awaited watering holes to be muddy quagmires littered with the bodies of dead and dying animals. Also small meadows, such as the one at Black Rock Springs, were often grazed out early in the season. The scarcity of water and forage transformed the passage over the trail into a nightmarish journey and its hardships were widely broadcast. As a consequence, the trail received little use by California-bound emigrants after 1849, though Oregon-bound settlers used it well into the 1850s (Jones 1980:16).

The Nobles Route, a cut-off from the Applegate-Lassen Trail, opened in 1851 and made the journey west much easier in terms of distance and water supply. Originally, it followed the Applegate-Lassen Trail to Black Rock Springs then cut southwest along the western edge of the Smoke Creek Desert to Shasta City, California. In 1856 the Nobles Route was shortened by the discovery of hot springs at Trego. From this point on, wagon traffic went directly from Rabbit Hole Springs to the hot springs at Trego, bypassing the long, dry stretch between Rabbit Hole and Black Rock Springs. By the 1860s, two freight and stage routes from the northern California towns of Chico and Red Bluff utilized the Nobles Route, bringing supplies to the mining towns of Star City, Unionville, and Mill City. The completion of the Central Pacific Railroad nearly as far east as the "great bend" of the Humboldt River in 1867 made this route out-of-date and use after this time was minimal (Jones 1980:10-11; Goodwin 1966:4, Lovelock Subbasin section).

During the period of emigration, traders established themselves along the emigrant routes. They traded badly needed supplies to the emigrants, receiving money, goods and exhausted livestock in exchange. Often trading post proprietors took advantage of the emigrants by charging exorbitant prices for water, whiskey, and other goods. Thieves, shysters, and gamblers sometimes established themselves at trading posts to prey on the unwary wayfarers (Bard et al. 1981:20). Trading stations were established along the California Trail in the Winnemucca district at Winnemucca (Frenchman's Ford), Pallen's Wells, Lovelock (Big Meadows), and the Humboldt Dike and at Deep Hole Springs on the Nobles Route.

California Trail - Physical Traces, Documentation and Significant Sites

No systematic documentation or inventory of physical traces of the Winnemucca District stretches of the California Trail route has been undertaken by the BLM. However, Bard et al. (1979) discuss the historic sites along the Winnemucca District sections of the Carson River and Truckee River Routes. Several journalistic descriptions of the Truckee and Carson Routes in the District are included in Bard et al. (1979) and Bard et al. (1981).

The Nevada Emigrant Trail Marking Committee (NETMC) has erected a number of markers at significant points along the California Trail, commencing at Callahan Bridge near Imlay and working southwest. Their book (NETMC 1975) contains a thorough description and mapping of the location of these markers. Many wagons, personal belongings and dying animals were abandoned in the Forty-Mile Desert. Relic hunters have collected many artifacts from the trail but many remain (Bard et al. 1981:17-18). A BLM cultural resource survey (Roney 1977a) has recorded some trail debris on the western edge of the Carson Sink. Trail segments of the California Trail are plotted on USGS 7.5 and 15' maps but condition of these traces has not been recorded by the BLM.

The following are significant points along the California Trail marked by NETMC or Nevada State Park System and/or noted in Bard et al. (1979) or Bard et al. (1981):

Humboldt River Route

Winnemucca - Trading post commenced operations here about 1853. The trail crossed the river here -- the best ford for many miles in either direction. Initially, a ferry was in operation here to transport the emigrants across the river. Eventually, a toll bridge was built here and a small settlement known as Gianca Bridge or Frenchman's Ford started in 1863.

Lassens Meadows - Large meadow at the "Big Bend of the Humboldt River" where emigrants rested, grazed their animals, and camped before leaving the Humboldt to take the Applegate-Lassen Trail or to proceed along the California Trail. Rye Patch Reservoir has inundated much of the former meadow.

Pallen's Well - Trading station north of present Lovelock on the west bank of the Humboldt River. Commenced operations about 1865 and died out by the end of the decade (Basso 1970:85).

Big Meadows of Lovelock - Emigrants rested in the lush meadows and grazed their animals before commencing their arduous crossing of the Forty-Mile Desert. Grass was cut, water taken on, bread baked, and unnecessary items discarded in preparation for the upcoming ordeal. A trading station began here in 1861.

Miriam - Last well with potable water before emigrants commenced their journey through the Forty-Mile Desert. The trail forked into the Truckee and Carson Routes at this point.

Carson River Route

Humboldt Dike - Natural Dam which contained the waters of Humboldt Lake before construction of Rye Patch Dam. During period of high water, excess water flowed through a gap in the dike into the Humboldt Slough. Emigrants crossed over the dike at several points. In 1855 emigrants reported that two unscrupulous characters had established themselves near the dike "in a plank hut on which an American flag was flying" for the purpose of robbing the passing emigrants. In 1859 Horace Greeley noted a "cottage built of stone and clay" that functioned as an official post office located in this vicinity. By 1862 a way station had been established at the cut in the dike known as "Murphys" (Bard et al. 1981:20).

Double Wells - Two wells dug by emigrants trying vainly to obtain potable water. Only water too brackish for consumption was found.

Humboldt Slough (Salt Creek) Crossing - Water seeped through cut in Humboldt Dike creating this boggy area. Some of the stones emigrants carried in and laid down to make the ground firm enough for wagon travel are still in place. By 1862 a ferry was operating here seasonally.

Sand Dunes - A BLM survey has located various emigrant artifacts in this vicinity (Roney 1977a).

Truckee River Route

White Plains - Alkali flat where old trail and abandoned roadbed of the Central Pacific run parallel.

"The Pass" also known as "Little Dike" - Emigrants proceeded through a low range of hills through this pass.

Brady Hot Springs known as "Boiling Springs" - The hot but potable water was a lifesaver to many emigrants during their arduous trek through the Forty-Mile Desert. Ditches were dug to cool the water so livestock could drink it. Emigrants camped and rested here before proceeding on their journey. Geothermal drilling operations have dried up the natural springs of the emigrants, leaving a dry hole.

Table Mountain - Trail runs close to mountain at this point to avoid alkali sloughs.

In addition to the above, NETMC has marked several trail segments in the Winnemucca District. Consult NETMC (1975:4-7) for location of these.

Applegate-Lassen Trail and Nobles Route

Many portions of these trails have been superseded by modern jeep trails or eradicated by the forces of erosion. This is true of the entirety of the Nobles cutoff within the District. There are some remnants of the original Applegate-Lassen Trail in the District. Between Rabbit Hole Springs and the edge of the Black Rock Desert, north of Hardin City in the northern Black Rock Desert, and between Mud Meadows and the Fly Canyon Wagon Slide are particularly good traces of the trail. Ample and precise emigrant journal descriptions of the trail routes within the District make them easily traceable. The Applegate-Lassen route through the Black Rock Desert is unique because of its great length and the comparative freedom from modern intrusions of the terrain through which it passes. Documentation and physical traces of these routes are covered more thoroughly in Jones (1980).

The following are campsites and significant points along the Applegate-Lassen Trail and Nobles Routes. Trails West, a trail marking organization, has marked most of them with yellow-painted railroad ties with descriptive brass plates affixed.

Applegate-Lassen Trail

Applegate-Lassen Junction with California Trail - Located on the edge of present Rye Patch Reservoir in the vicinity of present-day Imlay. This is where emigrants following the Applegate-Lassen Trail turned off the main California Trail.

Haystack Butte - A landmark that guidebooks advised emigrants to search for in the center of the plain to the north as a marker of the cutoff.

Willow Springs - Water hole.

Antelope Springs - Three springs on Majuba Mountain which were used by emigrants. Grave marker of pioneer woman who died in childbirth in 1860, and slab set in ground marking spot where two prospectors were massacred by Indians.

Rabbit Hole Springs - Water hole and campsite which in trail days was littered with the carcasses of oxen which perished there due to insufficient water supplies. Named by Jesse Applegate in 1846 because of the numerous rabbit trails leading to the springs.

Rabbit Hole Springs to Black Rock - Waterless 22-mile stretch across rugged sage plain and unvegetated Black Rock Desert was cruelest section of the trail. Thousands of oxen died, wagons bogged down in sand and personal belongings were thrown out to lighten the load. Ox bones and some debris from wagon traffic have been found along this stretch. At one time there were also grave markers along this segment (Jackson, personal communication, June 1981). Also, there is quite a long trail trace between Rabbit Hole and the edge of Black Rock Desert.

Black Rock Springs Campsite - Emigrants boiled their coffee and cooked their meat in the hot springs and dug wells for their animals to drink from. Live-stock grazed on the meadow grasses here.

Double Hot Springs Campsite - Lush meadow provided forage for animals and runoff from springs provided water.

Paiute Peak and Clapper Canyon - Peter Lassen, one of the founders of the trail, was murdered on Paiute Peak while on a prospecting trip. A companion was killed at the same time. Both bodies were buried in Clapper Canyon. Later one of the bodies was exhumed and reburied in a much more elegant grave in Susanville, California. However, it is unknown which of the two bodies lie in Susanville and which in Clapper Canyon.

Mad Meadows - Campsite which included several hundred acres of level, deep-grassed plain. Area where emigrants experienced problems with Indians. Animals stolen and butchered and at least one man killed.

Fly Canyon Wagon Slide - A rocky 45-degree angle slope of about two hundred feet where emigrants either lowered the wagons with ropes, locked the wheels with chains or poles, or added an extra team of oxen to slow the momentum. Although most efforts were successful, occasionally control was lost and wagons crashed to the bottom of the canyon.

Nobles Route

Black Rock Springs - Junction of 1852 Nobles Route and Applegate-Lassen Trail. Nobles Route headed southwest to Granite Creek and Great Boiling Springs from here.

Junction Nobles Route and Applegate-Lassen Trail - 1856 cutoff to Trego Hot Springs from Rabbit Hole.

Trego Hot Springs - Campsite and waterhole.

Granite Creek - Watering and rest site.

Great Boiling Springs - Campsite near present-day Gerlach.

Deep Hole Springs - Trading post built here by Ladue Vary in 1856 and the original stone structure remains intact.

Wall Springs - Campsite and water hole.

Buffalo Springs - Campsite and water hole.

ADDITIONAL READING

Armstrong 1967	Greeley 1868	Stewart 1962
Caughey 1932	Morgan 1943	Stewart 1936
Clark 1928	Morgan 1963	Wheeler 1971
Duncan 1964	Payne 1859	Yager 1970 & 1971
Goodwin 1965	Remy 1861	

SETTLEMENT

Although white trappers and explorers had traversed the District since 1828 and thousands of emigrants passed through the area on their way west during the 1840s, it was not until the 1860s that significant settlement occurred in the District. Minor settlements had been established along the emigrant trails at trading posts during the 1850s but large scale settlements did not commence until 1860-2. By then, the mining excitement in the Humboldts drew in hoards of prospectors along with the commerce and agriculture which supported the mines.

The following quote from the History of Nevada sums up the emigrant's reactions to the District and makes understandable the lack of settlement in the study zone during the emigration period:

What such a country was made for - so useless, so God-forsaken - was the standing question always entering into consideration It is true that now and then one caught a glimpse of a valley which, with seasonable rains, might make a fine home; but to the average emigrant the country was repulsive in the extreme, and thought of only as separating them from the land

that was pouring out its gold in the profusion of the El Dorado As late as 1859, Horace Greeley made his memorable journey across the country and remarking the repulsive appearance of the 'Great Basin' expressed the opinion that it would be better if the Sierra Nevada and Rocky Mountains could be brought together and the intervening country eliminated from the surface of the earth (Angel 1881:441).

Settlement in the District has been of three basic types: mining settlements, commercial centers (towns), and agricultural settlement. Short-lived settlement also took place at military posts and stage stations during the 1860s and along the railroad at depots and section houses during the late 19th centuries (see "Indian/White Interaction" and "Transportation and Communication").

Mining Settlements

Most of the early settlements that sprang up in the District were mining camps and towns. In 1860 the discovery of silver in the Humboldts drew in hordes of prospectors and miners from California and the Comstock Lode region. They settled in Star City, Unionville and other smaller mining towns in that area. The construction of mills along the Humboldt River brought Etna, Rye Patch, Torreytown, Oreana and other small towns into existence. Mill City was planned to be a large milling town but it, along with other small settlements along the Humboldt Canal, died with the termination of the canal project (see "Irrigation and Reclamation" and "Mining Industry"). In 1863 Vicksburg (Ashdown) was settled after silver was discovered in the northwestern part of the State. Settlement and mining were hampered by Indian problems there. In 1866 mining excitement in the Black Rock range brought into existence Hardin City, "a city with 15 houses and a thousand rats," but very little came of the supposedly rich silver ledge and the town died by 1870 (Jones 1980:59-60). Varyville was another camp in the Black Rock Desert started on Bartlett Creek in 1875 (Paher 1970:149). Queen City, Spring City, and Gouge Eye were established at the northeast end of Paradise Valley in connection with the mining boom in the Mt. Rose Mining District which commenced in 1878 and tapered off toward the end of the century. In 1879-90 Spring City and Queen City had populations of 200 and 100, respectively, while Gouge Eye had even fewer. Hardscrabble was another mining camp in this area which flourished briefly between 1889-1892 (Goodwin 1966:6, 11-12, Little Humboldt Sub-basin Section).

Many of these early towns died with the mining strikes by the end of the 1860s and most of the remainder were abandoned by the early 1890s. The resurgence of mining activity during the early 1900s brought some, such as those in Paradise Valley and Rebel Creek areas, back to life again. Buckskin, National, Daveytown, Awakening and many other towns also sprang up during this period. Similarly, the boom of the 1930s and the tungsten mining activities of the 50s brought new towns into existence and brought new life to old ones. Most eventually died out due to the exhaustion of the ore or the economic fluctuations of the market.

In addition to those mentioned above, there have been many other mining settlements which have sprung up and then faded away throughout the past 120 years. Best sources for these are Paher (1970), Browne (1972) and Texas Tech. (1980). Information concerning many mining settlements is sparse or nonexistent due largely to their brief periods of existence.

As indicated above, mining towns in the District have been characteristically ephemeral. Their locations were determined by the location of the ore as well as by the availability of the water and fuel required in the milling process. Mining camps were thus scattered throughout the mountain ranges, often wedged into narrow canyons, while mill towns such as those along the Humboldt River, were spread out in broad valleys.

Early camps often consisted of tents and other types of impermanent structures. Rapid growth often resulted in disordered arrangements of buildings. If the ore held out and the town persevered, more permanent structures might be constructed along the main street. These were generally the commercial buildings. The residences beyond these tended to be crude structures erected quickly so the business of finding riches could commence. If the ore continued to prove itself, residences too might eventually be replaced with more permanent structures (Bowers and Muessig 1982:107-8).

Samuel Clemens (Twain 1962:159-160) prospected in Unionville in 1861 and described the town and his residence there as follows:

Unionville consisted of eleven cabins and a liberty pole. Six of the cabins were strung along one side of the deep canyon, and the other five faced them We built a small rude cabin in the side of the crevice and roofed it with canvas, leaving a corner open to serve as a chimney, through which the cattle used to tumble occasionally, at night, and smash our furniture and interrupt our sleep. It was very cold weather and fuel was scarce. Indians brought brush and bushes several miles on their backs; and when we would catch a laden Indian it was well - and when we could not (which was the rule, not the exception), we shivered and bore it.

According to Wallace if the ore body "proved rich and lasting . . . the region around it sprouted amenities" (Wallace 1976:30). The sequence of events in the growth of a mining camp are as follows: first came the wagon freighters opening the supply lines, then the merchants and saloon keepers pitching tents and laying rough planks between barrels for counters. Then came the professional gamblers, followed by the prostitutes, the real estate speculators who sold lots, and the professional criminals attracted by the silver. As the mine died the population would move on to another strike (Wallace 1976:40). Except for the prostitutes, mining camp populations were almost entirely male (Bowers and Muessig 1982:103). Alcoholism was a prevalent problem among miners due to the monotony of the work and the oppressiveness of the atmosphere in the underground mines (Wallace 1976:67).

During more recent times, mining camps have changed their outward appearance but not their characteristic ephemeral quality. Trailer camps have replaced the tent cities of yesteryear. When a mining operation shuts down, mobile units move on to a new mining location, leaving little behind but that which has been discarded (Hulse 1978:199).

Commercial Centers

While the miners came and went and most of the towns they established were abandoned, many of the ranchers, farmers, and commercial enterprises that had

been drawn into the area by the demand created by the mines stayed and became components of more permanent and stable communities. Other towns that had originally started as mining towns developed into permanent settlements for other reasons. Major towns such as Winnemucca and Lovelock developed because of their proximity to major transportation routes. The following is a brief summary of some of the main settlements in the district which have endured.

The settlement and development of Paradise Valley was based on agriculture and mining. In the early days, Paradise Valley supplied grains, such as wheat and barley for flour, fruits (primarily apples), garden vegetables, and, later, meat from livestock to the mining camps of central Nevada and southwestern Idaho. The focal point in the area was the town of Paradise Valley, which was first established around 1866-67. Originally it was known as Scottville due to its proximity to Fort Winfield Scott. In 1869 the name was changed to Paradise City and later, with the decline in population, the name of the valley was assumed by the town (also see "Farming").

A number of interesting buildings still stand in Paradise. Alfonso Pasquale, a stonemason from Italy who herded large flocks of sheep in the Santa Rosa Mountains, was responsible for the building of many of these. The Micca House, with its tin ceiling imported from Italy and its sidewalk of closely fitted hand-hewn Santa Rosa granite slabs, was built by him and is listed on the National Register of Historic Places. Other buildings erected by Pasquale include the beautiful 3-story Auditorium Hotel which was destroyed by fire around 1938-39, a general store, a church, a sanitorium for those suffering from contagious illnesses, a blacksmithing and wagon-making stop, a large stable, a slaughterhouse, several houses, and granite benches and hitching racks. Another interesting building, also on the National Register, is the Silver State Flour Mill located on Martin Creek outside of town. C. A. Adams established the mill in 1868 and Davis and Pierce acquired it in 1875 (Goodwin 1966:7-11; Bragg 1976:120-123).

Although a trading post was established there in 1853, the settlement of Winnemucca was officially established by Frank Baud and Louis and Theophile Lay in 1863. It was renamed Winnemucca when the Central Pacific Railroad reached the settlement on September 16, 1868. With the impetus of the railroad, Winnemucca soon was the center for transportation and freight lines throughout the region and became county seat of Humboldt County in 1873 (Goodwin 1966:2-5, Sonoma Sub-basin Section).

The Winnemucca Hotel, built in 1863, still stands and operates as a hotel and Basque food restaurant. Many other original commercial buildings have been destroyed by fire.

Winnemucca, which originated for the purpose of providing services for passing emigrant travel, today gains its major income from tourists and travelers on Interstate 80 or Highway 95 who utilize its service and gambling facilities. It is also the center of shipping and shopping for Humboldt County.

Lovelock had its first settler in 1861 and a trading station was in operation there soon after. The town became the distribution point for the booming mines of the Trinity District. The fertile grasslands of the valley soon turned it into a major alfalfa seed and hay producing area which nurtured

the district livestock industry. It remains so today with large feed lots operating there as well. It is a center of trade for Pershing County. Sales to travelers on Interstate 80 also contribute to the town's economy.

Golconda with its hot springs flourished initially as a spa and resort. Although it continued to function as such, after the coming of the Central Pacific Railroad in 1868 the town became a depot with connecting freight lines and a telegraph station. It also served as a link with the railroad for the mining town of Gold Run (later Adelaide) which developed in 1867. Golconda's development was spurred in 1897 by a flurry of copper strikes at Adelaide. A twelve-mile narrow gauge railroad began running between the two towns on January 1898, but the Golconda boom died by 1900 with only sporadic mining afterwards (Goodwin 1966:6-7, Sonoma Sub-basin Section; Paher 1970:154-156).

Fort McDermitt ^{2/} was established on the East Fork of the Quinn River during the summer of 1865 for the purpose of protecting travelers between Boise, Star City, and Virginia City. Originally known as Quinn River Camp No. 33, the camp was subsequently renamed in honor of its founder, Lieutenant Colonel Charles McDermitt, who had met his death at the hands of Indians during an ambush later in 1865. By 1879 Camp McDermitt included several adobe, stone, and frame structures and was reclassified as Fort McDermitt. The Fort became a focal point for local Paiute many of whom settled around it in order to take advantage of free handouts of food and clothing which were distributed by the Army. In 1889, the army post was turned over to the Interior Department as the presence of the military in the area was no longer deemed necessary. The Fort's buildings were consequently reconstructed for use as headquarters and schools for the Fort McDermitt Indian Reservation. Some of these structures still stand today (Paher 1970:151, Mordy and McCaughey 1968:91-92; Steward and Wheeler-Voegelin 1974:298). Beginning in the 1880s the community of McDermitt five miles to the west of the Fort became heavily populated by Basques who herded sheep in the surrounding areas (Hanley 1975:194-5).

The town of Gerlach was established in 1906, when the Western Pacific Railroad was constructed through the District. In the early 1900s a minor range war which resulted in several fatalities took place in the Gerlach area. Today Gerlach is supported largely by the railroad, while nearby Empire is centered around gypsum mining and processing (Mordy and McCaughey 1968:188).

Sulphur was established when sulphur mining began there in 1874. When the Western Pacific tracks were laid in 1909 across the Black Rock, Sulphur became a railroad station. In 1953 the post office was closed (Paher 1970:148, 153) and Sulphur is now uninhabited.

Agricultural Settlement

Besides the residents of major trade and commercial centers, the study zone was settled by ranchers and farmers who brought their families with them and settled permanently.

^{2/} McDermitt is sometimes spelled with one "t". For the purpose of consistency it will be spelled with two "ts" throughout this document.

A large number of the ranchers and farmers who presently operate in the District are descendants of early settlers in the area. Ranchers and farmers became prominent figures in local communities and contributed colorful traditions such as rodeos and fairs. Town residents have expressed the opinion that the ranchers and farmers provide the whole area with its "context" and rural flavor (Jones and Loomis 1979:49). The following passage aptly describes the historical roles of farmers and ranchers in the Winnemucca District.

Many aspects of central Nevada history came together on the region's ranches. Farmers and ranchers were central Nevada's first real settlers--people who came to invest their lives and fortunes in the long term proposition of agriculture and livestock raising. Thrown upon their own initiative, they made full use of resources available to them. They constructed their ranches of local materials; they sought water and dams, digging wells and erecting windmills; their livestock fully exploited the potential of the range. Their persistence, and the fact that they remained in place while the mining economy and society ebbed and flowed around them, gave them important roles in developing and sustaining transportation and communications systems throughout the region, and allowed them to develop a continuity and community that underlies much of the central Nevada experience (Bowers and Muessig 1982:106).

Agricultural settlement patterns, ultimately controlled by the availability of water and fertile land, were influenced initially by the distribution of the mines and then by the arrival of the railroad. As the mines died out and the railroad made outside markets available, the scatter of small farms supporting the mines gave way to a pattern of "a small number of widely spaced ranches and enormous grazing areas" with "most ranches located in or near the foothills of mountain ranges close to springs or streams", and "natural meadow if possible" (Bowers and Muessig 1982:77, 107). More recently, ranch consolidation has resulted in a growing trend of fewer owners controlling larger plots of land, with livestock operations being managed from one or two central ranches and many old ranch dwellings being left abandoned. Modern irrigation techniques have also brought development and settlement to some new lands where there previously was none (see "Agriculture").

Land Laws and Land Actions

Land ownership and settlement patterns, particularly those of agricultural settlement, have also been influenced by federal land laws and land actions.

During the early 1800s all lands within the territorial boundaries of the United States, except for the territory within the original 13 states, was considered to be part of the public domain and was managed by the Federal Government. Until 1835 large blocks of public lands were sold off to speculators to help pay the national debt. After this time, tenant farmers and urban industrial workers began to call for passage of a law which would allow them to own and work their own piece of land. This eventually led to the passage of homestead laws which "were based on the belief that the public domain belonged to the people and that each head of family was entitled to a home or farm, the possession of which should be protected against seizure for debt" (Encyclopedia Britannica 1969:645-6).

The Pre-emption Act of 1841 allowed squatters to file on public land for a minimum charge of \$1.25 an acre. The Homestead Act of 1862 allowed U. S. citizens who were either at least 21 years old, the head of the family or a U. S. war veteran, to file on 160 acres for a fee of \$10.00 (unless a veteran). After five years of either residing on or cultivating this land the homesteader could receive a patent to the land (signifying complete ownership) through payment of minimal additional fees (Encyclopedia Britannica 1969:645-6).

There were many abuses of this law. Land had to be surveyed before a patent could be issued. Since much of the public land remained unsurveyed for many years, some squatters were able to control large parcels of prime farmland for a lengthy period merely by registering their "squatters right" to the land and their intent to file a homestead claim once the land was surveyed (Georgetta 1972:69). When the land was eventually surveyed, many of those who had claimed more than the 160 acres allowed by law through "squatter filings" were unwilling to give up land that they had come to think of as theirs. Homesteaders who filed on the squatters' lands were sometimes driven off by force. Those who wished to retain large squatter claims and others who wished to build up huge estates sometimes hired men to file on the land for them. The "commutation clause" of the Homestead Act facilitated this by allowing the homesteader to buy the land filed on at \$1.25 an acre after six month's residence on it.

Hired homesteaders and speculators who intended resale at a profit fulfilled residency requirements by merely erecting a crude shack, stringing a fence, sleeping there a few nights, and leaving a few items of clothing as proof of occupancy. Peter French, Miller and Lux and other stockmen built up large land holdings through the purchase of lands from either homesteaders who filed on the land with the intention of resale at a profit or from those whose dreams of having a successful farm of their own had not been realized. Some of the homesteads purchased by Peter French were obtained from men who worked for him (Georgetta 1972:69; Fairfield 1916:305; Encyclopedia Britannica 1969:645; Treadwell 1931; French 1964:119).

The Desert Entry Act of 1877 originally allowed homesteaders to file on 640 acres of desert land which could be made productive by irrigation. Although these were supposed to be arid lands, land office authorities were duped into patenting "many thousands of acres of wild hay meadows" during the early years of Desert Entry filings. By taking advantage of the provisions of both the Homestead Act and Desert Entry Act, a fairly large estate could be acquired by a family; the father and each son 21 or older could each file on a 160 acre Homestead Claim and a 640 acre Desert Entry. In addition, the mother and each daughter of legal age could file on a 640 acre Desert Entry claim. In 1890 Desert Entry filings were reduced to 320 acres (Georgetta 1972:70).

In 1885 Congress allowed Nevada to exchange sections of land the State had originally been granted by the Federal Government for a lesser number of sections of its own choosing. Most of these "State selection" lands were later sold off to private parties to raise money for schools. A review of BLM Master Title Plat files suggests that state officials systematically selected sections with springs or water sources in them. Hazletine et al. (1960:5) describes this land action and its consequences as follows:

As in other states, on admission into the Union Nevada was given sections 16 and 36 in each township. Up to 1880, the State was unable to sell more than 230,000 acres, and so were hard pressed

to get income for schools. It was proposed that Congress take back the unsold 3,000,000 acres and give the State 2,000,000 acres which the State officials would choose. Congress agreed, and in 1885 the State remodeled the land laws and provided for the selection and sale of these lands. This exchange made possible the purchase of large holdings that covered hay land, irrigation water and stock water, and thus dominated the use of larger areas of contiguous and associated public range lands.

By 1900 the public domain in the District consisted mainly of vast expanses of arid and semi-arid lands with most water sources and meadow lands being privately owned. The Taylor Grazing Act of 1934 preserved what pasture and rangeland was left by removing it from homestead entry and permitting its use only through lease from the Federal government (Encyclopedia Britannica 1969:646).

Land ownership patterns in the District have been complicated by the "checkerboard" land grants made by Congress to the railroad companies during the 1860s to help finance construction of the railroads. Railroad companies subsequently sold off much of the best land in these grants. This has resulted in a swath of land about 40 miles wide along the original route of the Central Pacific Railroad which is dominated by a pattern of alternating sections of public land and private or railroad land. Since the railroad route followed the Humboldt River some of the better watered lands in the district are tied up in this checkerboard ownership pattern.

Although historically there have been many problems and abuses associated with Federal land laws and actions, it is important to emphasize that Federal lands legislation did contribute greatly to the orderly settlement of the west. Particularly during the early stages when the influx of settlers was great and the future intensity of land use and settlement was largely unforeseen, Federal lands regulations provided a system for administration, surveys, and disposal of the public lands. Also, despite drawbacks (such as instances of lack of planning and coordination, human error, and outright falsification of data) lands records provide one of the best historical sources for research concerning land use, settlement, and ownership (Till 1982). For more information regarding land laws, surveys, and records refer to the BLM publication, Title Status Records ("The Red Book") compiled by Kenneth J. Sire.

Architecture

The following generalization concerning architecture in the Battle Mountain District is applicable to the Winnemucca District as well:

Central Nevada's historic architecture reflects, on the one hand, use of materials, construction methods and stylistic attributes prevalent throughout much of the 19th and early 20th century America, and on the other an often ad hoc manipulation of locally-available materials to highly utilitarian ends. The first category of architecture is found mostly in towns, where fired brick, dressed stone, milled lumber and decorative elements from catalogues were commonly employed in both residential and commercial structures. The second

category is largely (but not exclusively) found on ranches in rural areas, where distance made manufactured building materials prohibitively expensive. Central Nevada's rural architecture is characterized by a rich variety of construction methods and creative, sometimes idiosyncratic, use of local materials, including adobe brick, poured adobe, rubble stone, wattle and daub, and many varieties of timber construction (Dennett et al. 1981:4).

A very thorough description of various architectural styles and building material utilized in different types of structures is included in Bowers and Muessig (1982) which should be consulted for more information on this subject.

The earliest houses in the Winnemucca District were made of locally available materials. The following quote refers to the dwelling built in Paradise Valley during the 1860s by one of its first residents, Jacob Hufford:

After running the station (Jacob's Well) for a while they sold out to Worthington, a big cattle man, and moved up into Paradise Valley in 1864 or 65 renting the Denio (or was it the Havlin place?) while building a house on his own location over on Martin Creek. This Martin Creek house, as were about all the houses then in the valley, was built of grass sod with a thatch roof. Mr. Hufford has built several of this class of houses and knew how to build them so that while unsightly, they were comfortable and serviceable. This Martin Creek house we were told was afterwards made a part of the Sam Pierce home serving as the kitchen (Hufford 1947).

Adobe was used frequently in the District. An adobe brick factory in Paradise Valley furnished nearly all the bricks for adobe buildings in the valley (Marshall 1980:8). The town of Adobe, two miles west of present day Imlay, derived its name "from the material which the bulk of its buildings were made". Decaying walls of adobe still remain here (Basso 1970:1).

The Rudder Ranch adobe recently excavated by Mary Rusco (Rusco and Hart 1979), built between 1871 and the 1890s, was made by pouring adobe into forms one course at a time. According to Rusco the construction of the building indicates excellent utilization of local building materials, ". . . the only materials not obtainable locally were the wooden frames into which the adobe was poured to dry, other wood used for framing and covering the roof and floor, the window glass, and the doors. The frame boards were used as part of the supporting structure for the roof" (Rusco and Hart 1979:65).

Ranch architecture is covered thoroughly in Bowers and Muessig (1982) and the discussion is applicable to the Winnemucca District. Consult this source for more details.

Until well into the 20th century, ranch building construction was almost exclusively a function of the kind of materials locally available: cottonwood, juniper, willow, adobe and stone. These materials were seldom worked by accomplished carpenters or masons; rather they

were "finished" only to the extent absolutely necessary, and then assembled with great dispatch. The result was a group of buildings "not of very ostentatious or even comfortable pretensions"--at least at first (Reese River Reveille, 30 April 1864:3). The functional invariably won out over the aesthetic, and scavenged materials, such as corrugated metal, railroad ties and even flattened metal cans eventually appeared on ranch structures. As long as it served the purpose, any material was useful: ranchers' priorities for investment lay in land and livestock rather than buildings (Bowers and Muessig 1982:90).

Rusco and Hart (1979) have studied the Ruddel Ranch complex in Lovelock and The American Folklife Center/Smithsonian's study of Paradise Valley included architectural examination of ranch buildings in Paradise Valley. A report concerning the latter is presently in preparation (Marshall, personal communication, June 1980).

Line Camps

Line camps (alternatively referred to as cow camps or buckaroo camps) are the "temporary shelters . . . placed strategically at great distance from the home ranch . . . where men stay for short periods of time while tending cattle through the government grazing allotments . . . Line camp refers to both the building and the place" (Marshall and Ahlborn 1980:38).

The American Folklife Center/Smithsonian Paradise Valley Study (1978-1980) recorded a number of line camps in that area. Line camps were thoroughly documented, photographed and drawn to scale by researchers. In addition, one of the line cabins was dismantled and reassembled at the Smithsonian Institute for the exhibit there in 1980-1981.

A variety of structural types was recorded by project members in the Paradise Valley area. These ranged from canvas wall tents set up on the ground to two level, granite buildings constructed by Italian craftsmen. Other types included those of corrugated metal, railroad ties, logs, sawn sandstone and adobe, as well as wall tents with raised wood platform floors and many wood frame structures.

Most line cabins recorded were one room structures of either square or rectangular shape with gable roofs. This house type (and its variations) is known as the "single-pen." It is a style which developed its present shape and size in the Middle Ages in Europe and was brought to the American colonies from the British Isles by the first settlers (Marshall and Ahlborn 1980:41).

A construction technique referred to locally as "single wall construction" was frequently used in building woodframe line shacks. Marshall and Ahlborn (1980:45) describe this mode of construction as follows:

. . . this framing technique uses no vertical bracing but depends instead on a strong wall of large vertical boards made rigid by the roof system. Second and third layers of battens, horizontal boards and interior insulation are usually added.

A few line cabins have been recorded by the BLM archeologists during the course of inventory or field surveys. More thorough documentation and scale drawings need to be done on these however. Interviews with District field personnel yielded accounts of over 100 line camps (including those recorded by archeologists) in the Winnemucca District, many of which are still in use. General descriptions, locations and photos, where available, were obtained, but the list is incomplete and unverified, merely providing a general idea of the nature and extent of this resource in the Winnemucca District and a starting point for future research. All line cabins should be visited, photographed, drawn to scale, and otherwise recorded in the future.

Line camps observed by District personnel appear to be of similar structural styles and building materials to those recorded by Marshall and Ahlborn in Paradise Valley. Piled stone lean-tos, dugouts, sod and aluminum siding were other types noted. Sheep camps as well as cow camps were mentioned. One distinctive feature of sheep camps was the presence of outdoor bread baking ovens. Line cabins were generally located close to a spring or other water source and had a nearby corral. By far the most common structural type in the District appears to be the woodframe one-room building.

Line camps are located on private property and on public land. Some of the latter were built under Section 4 permits which enable the applicant to construct such structures on the public lands for the purpose of administering his livestock operation.

Although many of the old line camps remain in use, trailers or mobile homes are also sometimes used for this purpose.

Many old ranch buildings and line cabins still stand although some have been abandoned because of ranch consolidation.

Physical remains of mining camps range from practically nothing to standing structures. In those instances where the habitation period was brief, tents and sometimes even more durable structures were relocated to more promising mining strikes. In those cases where the ore was more lasting, the central core or main street of commercial buildings sometimes remained standing, as these were usually built more solidly than residences on the outskirts of the town.

Since the commercial centers tended to have more permanent structures than the mining towns, some examples of early buildings, such as the Winnemucca Hotel (1863) and many buildings in Paradise Valley, still stand. However, many of the early buildings have been razed by fires or destroyed to make room for more space efficient modern buildings.

Mining camps, homesteads and other historic habitation sites where buildings have fallen into ruin or have been razed, relocated, vandalized by relic collectors or otherwise destroyed are sometimes recognizable by "fences, old clearings, rock piles, foundation lines, scattered trash, and strewn lumber" (Roberts 1980:157). Nail types, structural style and building materials are somewhat useful in dating historic sites as are buttons, bottles, ceramics, cans, cement, barbed wire and parts of surreys, buckboards and wagons (Roberts 1980:157).

Post Offices

Table 3 and Map 6 are compiled from Harris (1973) and show the locations and the periods of operation of post offices in the Winnemucca District from 1962 to 1972. Not every settlement had a post office and dates of operation do not necessarily correspond exactly to periods of growth and prosperity. Nonetheless, this information provides some indication of the number of settlements, their distribution, duration, and, in some cases, periods of hibernation and reawakening. Other historic settlements in the Winnemucca District, as well as many of those listed on Table 3, are described in Browne (1972), Paher (1970), Basso (1970), Mordy and McCaughey (1968) and Texas Tech (1980). Historic settlements have been recorded on BLM cultural resource forms, primarily utilizing the above sources. Some field reconnaissance and photodocumentation of recorded sites has been performed but much more remains to be done. The information compiled in Table 3 and Map 6 should be used in conjunction with the above-mentioned sources for an accurate determination of dates of existence, function, location and distribution of settlements in the Winnemucca District. Angel (1881), Fairfield (1916) and Bragg (1976) provide supplementary accounts of some historic settlements in the Winnemucca District.

Table 3

HISTORIC POST OFFICES IN THE WINNEMUCCA DISTRICT

OFFICE	COUNTY	ESTABLISHED	DISCONTINUED	LOCATION
Amos	Humboldt	Jan 1889 Mar 1898	Apr 1890 Dec 1926	C2
Ashdown	Humboldt	Aug 1904 May 1920	Sept 1909 Dec 1921	B1
Bonnie Briar	Humboldt	June 1908	Aug 1911	C3
Brown	Churchill Humboldt	July 1881 Apr 1884	Nov 1881 Feb 1887	B4
Browns	Humboldt	Dec 1895	Jan 1896	Rescinded
Buttons	Humboldt	May 1889	Oct 1891	E1
Buffalo Hills	Roop/Washoe	Mar 1879	Nov 1913	A3
Camp McDermitt Name Changed to Fort McDermitt May 1879	Humboldt	Oct 1866 May 1870 Jun 1871 Nov 1872	Dec 1869 Oct 1870 Sept 1872 May 1879	C1
Chafey Name changed to Dun Glen Mar 1911	Humboldt	Aug 1908	Mar 1911	C3

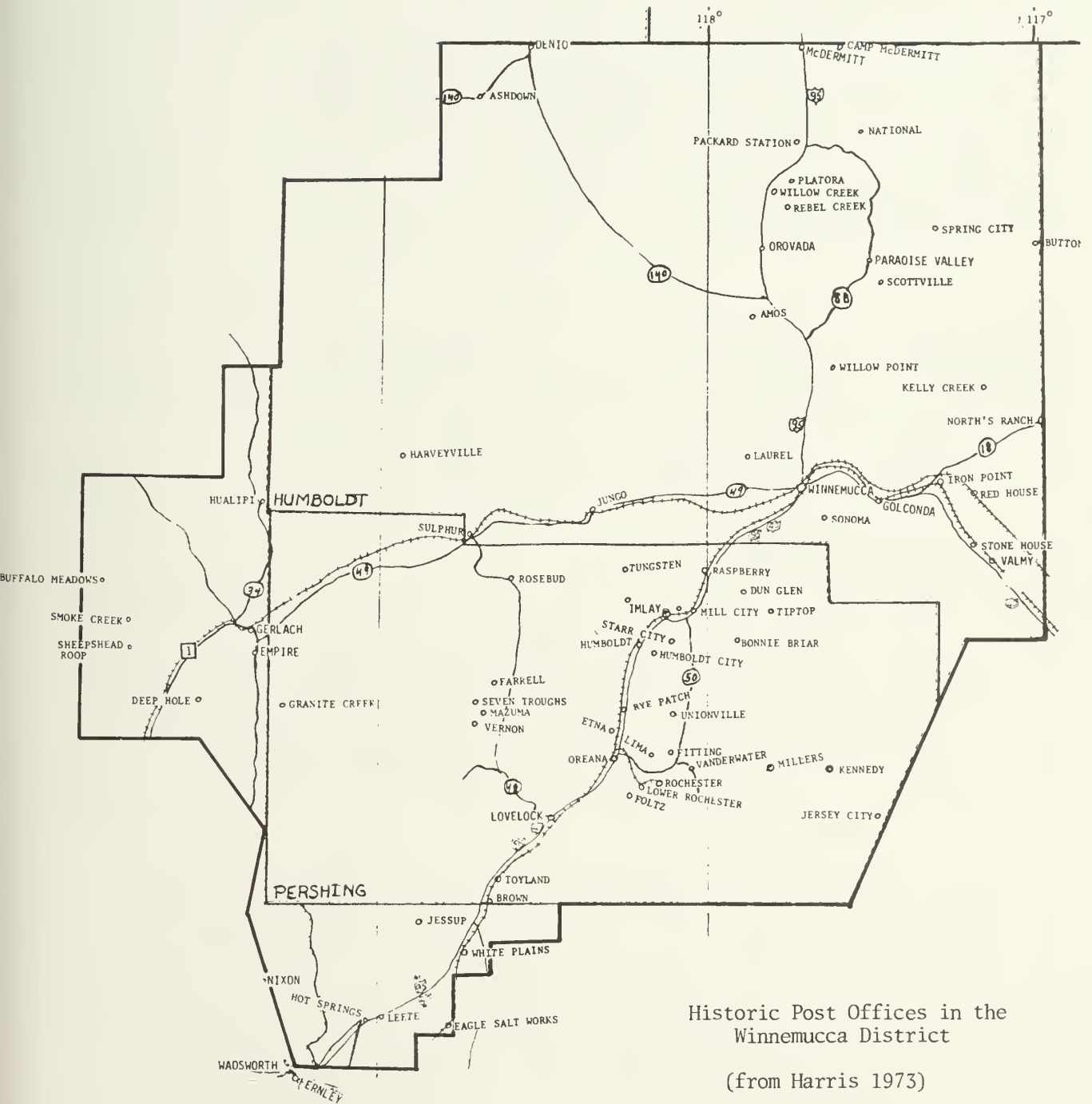
Deep Hole	Roop Washoe	July 1866 Feb 1894	Aug 1867 Oct 1911	A3 A3
Denio Moved from Harney Co., OR Jan 1851	Humboldt	Jan 1951	-----	B1
Eagle Salt Works P.O. moved to Leete Dec 1899	Churchill	July 1871 Jun 1877	Sept 1871 Dec 1899	B5
Empire	Washoe	Feb 1951	-----	A3
Etna	Humboldt	July 1866	Oct 1866	C3
Farrel	Humboldt	July 1907	Sept 1911	B3
Fitting	Humboldt	Mar 1905	Nov 1915	C4
Foltz	Humboldt	Mar 1892	Mar 1904	C4
Fort McDermitt Previously known as Camp McDermitt Name changed to McDermitt Mar 1891	Humboldt	Mar 1879	Mar 1891	C1
Gerlach	Washoe	Oct 1909	-----	A3
Golconda	Humboldt	Dec 1869	-----	D2
Haas Named changed to Norths Ranch Nov 1887	Humboldt	Jan 1885	Nov 1887	E2
Hualipi	Humboldt	Jun 1915	Apr 1919	A2
Hot Springs Both probably at same location; Roop County was never organized and its bound- aries were uncertain. Hot Springs was previously known as Spring City. Same location as Humboldt House.	Roop Churchill	Oct 1866 Mar 1873	Aug 1867 Oct 1874	B5
Humboldt City	Humboldt	Apr 1862	Nov 1869	C3
Humboldt House Same location as Humboldt.	Humboldt	Jun 1872	Nov 1909	C3

Humboldt	Humboldt/ Pershing	Oct 1912	May 1919	C3
Imlay	Humboldt/ Pershing	Oct 1908	-----	C3
Iron Point	Humboldt	Feb 1878 Oct 1910 May 1917	Mar 1878 Oct 1914 Jan 1919	D2
Jersey City	Humboldt	Aug 1876	Apr 1877	D4
Jessup	Churchill	Mar 1908	July 1912	B4
Jungo	Humboldt	Jan 1911	May 1952	C2
Kelley Creek	Humboldt	Feb 1887	July 1888	D2
Kennedy	Humboldt	Jan 1892	Dec 1917	D4
Laurel	Humboldt	Jun 1911	July 1913	C2
Leete P.O. moved from Eagle Salt Works Dec 1899	Churchill	Dec 1899	Jan 1912	B5
Lima	Humboldt	Dec 1866	Dec 1867	C4
Lovelock Previously known as Lovelocks	Pershing	Mar 1922	-----	C4
Lovelocks	Humboldt	Feb 1875	Mar 1922	C4
Lower Rochester	Humboldt/ Pershing	Jun 1915	Jun 1943	C4
Matteson Most likely res- cinded, cannot be located.	Humboldt	Feb 1868	July 1868	
Mazuma	Humboldt	Aug 1907	Nov 1912	B3
McDermitt Previously known as Fort McDermitt.	Humboldt Malheur, OR Humboldt	Mar 1891 May 1904 May 1908	May 1904 May 1908 -----	D1
Mill City	Humboldt Pershing	Jun 1864 Jun 1868 Mar 1870	July 1865 Feb 1870 Dec 1948	

Millers	Humboldt	Dec 1889	Apr 1892	D4
Mud Meadows	Roop	Feb 1867	Aug 1867	B2
National	Humboldt	Aug 1908	Dec 1919	D1
Norths Ranch Previously known as Haas	Humboldt	Nov 1887	Feb 1911	E2
Oreana	Humboldt	Feb 1867 Feb 1870 Oct 1873	July 1869 Sept 1873 Mar 1883	C4
	Pershing	Aug 1913	Feb 1951	
Orovada	Humboldt	Sept 1920	-----	C1
Packard Station More information on this station	Humboldt			D1
Paradise Valley Also known as Paradise	Humboldt	Feb 1871	-----	D1
Platora	Humboldt	May 1909	Sept 1925	D1
Raspberry	Humboldt	May 1870	July 1870	C3
Rebel Creek	Humboldt	Apr 1902	Dec 1947	D1
Red House	Humboldt	Oct 1914 Apr 1939	Apr 1936 Jun 1955	D2
Rochester	Humboldt/ Pershing	Feb 1913	Nov 1926	B7
Rosebud	Humboldt	Jan 1907	July 1909	B3
Rye Patch	Humboldt	Nov 1872	Nov 1916	C3
Rye Valley Name changed to Rye Patch Nov 1872	Humboldt	Jun 1872	Nov 1872	C3
Sanborn P. O. Department Location Report States that it is 30 miles southwest of Mill City, but gives no further information.	Humboldt	July 1890	July 1981	

Scottville	Humboldt	Feb 1868	Nov 1869	D2
Seven Troughs	Humboldt	July 1907	Sept 1918	B3
Sheepshead	Roop/Washoe	Mar 1879	Mar 1926	A3
Siskron Name changed to Spring City in Feb 1879	Humboldt	Nov 1878	Feb 1879	D1
Smoke Creek	Roop	July 1866	Aug 1867	A3
Sonoma	Humboldt	Dec 1876	Jan 1877	D3
Spring City Previously known as Siskron	Humboldt	Feb 1879	Mar 1895	D1
Spring City Named changed to Hot Springs Oct 1866	Roop	Jun 1866	Oct 1866	B5
Starr City	Humboldt	Apr 1862	Sept 1868	C3
Stone House Named changed and P.O. moved to Valmy 24 Mar 1915	Humboldt	Nov 1890	Mar 1915	D3
Sulphur	Humboldt	Jan 1899 Jan 1910 Aug 1946	Sept 1899 Nov 1943 May 1953	B3
Tiptop	Humboldt	May 1908	Oct 1909	D3
Toyland Also known as Toy and Toulon	Humboldt	Dec 1916	Nov 1918	B4
Tungsten	Pershing	May 1944	Oct 1962	C3
Unionville	Humboldt/ Pershing	Apr 1862	Jun 1956	C3
Upper Rochester	Pershing	Nov 1927	Jan 1928	C4
Valmy P.O. moved from Stone House	Humboldt	Mar 1915	-----	D3

MAP 6



Vanderwater	Humboldt	Jun 1880	Apr 1881	C4
		Aug 1882	Jan 1883	
		Feb 1883	July 1883	
Vernon	Humboldt	Oct 1906	July 1918	B3
Willow Creek Moved to Rebel Creek 1902	Humboldt	May 1879	Apr 1902	C1
Willow Point	Humboldt	Jun 1865	May 1868	D2
		Apr 1879	Aug 1908	
		Oct 1908	Apr 1910	
Winnemucca	Humboldt	Feb 1866	-----	D2

Compiled from Harris (1973).

Additional Reading

Ashbaugh 1963	McKee 1973	Trewartha 1948
Blumenson 1977	Palmer 1958	U.S.D.I., N.P.S. 1962
Foley 1980	Peters 1947	U.S.D.I., N.P.S. 1973
Gillis 1868	Rifkind 1980	Venstrom 1940
Mellinger 1971	Shinn 1965	Wiffen 1969
Merrifield 1957	Torrence 1944	Sire n.d.

INDIAN - WHITE INTERACTION

Contact between whites and Indians in the study zone can be divided into four phases: exploration by trappers (1828-1840), immigration (1840-1860), settlement by miners and agriculturalists climaxing in strife between white and Indians (1860-1870), and removal of Indians to reservations (1880-present) (Steward 1938). Indians at first withdrew from, then resisted, and finally succumbed to the white incursions on their lands. Westward expansion by the United States resulted in the local Paiutes and Shoshones losing their life-style, most of their land and all but a few vestiges of their culture.

Exploration by Trappers

When Ogden traveled along the Humboldt River in 1828, his encounter with the local Indians was a friendly one. They gave him valuable information about the waterways and geography of the unexplored country to the southwest. However, when Ogden returned to the area in 1829, the first reported hostile confrontation between Indians and whites in the study zone occurred. According to Ogden, a war party of approximately 200 Indians marched on his camp in the vicinity of the Humboldt Lake. He maintained that they were beating war drums and were partially armed with weapons possibly plundered from the Jedediah Smith Party. Ogden's placing and description of this incident is open to doubt (see "Horses, Mules and Burros"). In any event, though, no conflict ensued. By Ogden's account, he bravely approached the war party and convinced them to ride away peacefully (Steward and Wheeler-Voegelin 1974:92).

Four years later, however, the first confirmed conflict between whites and Indians in the District took place in the same general area. In 1833 Joseph Walker's trapping party was traveling through the Humboldt Sink when a reported 800 or 900 Indians congregated and began following the trappers. Walker's men had killed several Indians upstream after finding that their beaver traps had been stolen. Walker feared that the Indians were bent on retribution for these acts and when they did not respond to his command to disband, he ordered his men to charge. The whites killed 25 to 39 Indians and the remainder fled in terror. On Walker's return trip through this region in 1834, he once again encountered a large party of Indians in the vicinity of Humboldt Sink. The outcome of this confrontation was similar to that of the first, with 14 Indians being killed and several more wounded by the trappers. It is not possible to determine whether the Indians actually intended to harm the whites or whether they were merely curious. It is probable though, that the Walker party's slaughter of local Indians was influenced by their perception of the latter as savages. In any case, the aggressive actions of the Walker Party set the precedent for future Indian-white relations in this area (Rusco 1976; Bard et al. 1981:14, 26-28).

Immigration Period

During the immigration period Indian-white relations deteriorated further as the west-bound travelers began to severely damage the fragile ecology of the arid lands on which the Indians were dependent for food and water.

Wagon routes tended to be laid out through the areas which were best watered and most favored for food gathering, i.e., the Humboldt River. Domestic livestock consumed many of the wild seed crops vital to the Indian's existence and forced out native wildlife. Travel over the emigrant trails was light during the early and mid 1840s but the masses of people passing through the area after the discovery of gold in California caused the native population severe hardships.

Generally, Indians responded to these impacts by moving away from the areas which the immigrant trails passed through. However, some Indians remained in the vicinity of the trails and compensated for their usurped food resources in various ways. Some begged handouts from the white travelers, while others stole and butchered emigrant livestock. In some instances, emigrants retaliated for the Indians' acts of larceny with hostile actions such as that taken by one party who burned down the tule huts of Indians in the lower Humboldt River area (Bard et al. 1981:28-29; Steward 1938).

Some friendly interaction did take place between Indians and whites with the emigrants learning such things as uses of wild plants. Indians who remained along the emigrant routes also began to adopt some white customs and modes of behavior. One important development was that a few Indians began to ride horses rather than eat them as they had initially. By 1855, Indians in the Humboldt Sink spoke some English. Some of the Indians in the lower Humboldt region had worked as seasonal farm laborers in California, but these reportedly had tried and rejected white ways. Others copied the practices of white trading stations, requesting exorbitant fees for their services and payment for use of roads and water (Bard et al. 1981:30).

Settlement and Conflict

As the District lands became settled, impacts on resources became more widespread. The development of the cattle and sheep industries resulted in consumption of seed crops in every available area. Water was diverted for farming, thereby disrupting fishing and possibly the taking of waterfowl. Pinyon groves were cut down for fuel and building materials. With the growing Caucasian encroachment on their lands and resources, it became increasingly difficult for local Paiutes and Shoshones to practice their traditional nomadic hunting and gathering way of life.

The Indians attempted to cope with the loss of their lands and food base in several ways. Some worked as shepherds, buckaroos or farm hands on local ranches while others congregated around settlements and military forts where they subsisted partially on handouts and government rations (Layton 1977; Hopkins 1883). A study of Shoshone Indians in Austin, which is located south-east of the District, indicates that Indians in that area supplemented handouts with sales of pinyon nuts, firewood, pelts, wicker baskets, wild mushrooms, and wild birds as well as with periodic employment at various forms of manual labor such as hauling water and making adobes (Clewlow, Wells and Ambro 1978:13-33). It is probable that similar survival tactics were employed by Indians in the study zone during this period.

Another segment of the population acquired horses and formed mobile predatory bands. They continued their hunting and gathering existence on horseback, supplementing it with stealing and occasional employment on ranches. The activities of these roving bands harassed settlers and travelers to the point that several military forts were established in northern Nevada during the mid-1860s and by the late 1870s most of the bands had been broken up. In the Winnemucca District military posts were established at Fort Winfield Scott, Fort McDermitt, and Willow Point Camp in Paradise Valley, in the Quinn River Valley, Camp Overend south of Golconda, Camp McGarry and Camp McGarry Outpost at Summit Lake and Soldiers Meadows, Camp McGee at Granite Creek near Gerlach, and Dun Glen in the East Range (Ruhlen 1964; Paher 1970).

Although some Indians, most notably Chief Winnemucca, were friendly toward whites, Indian-white relations were marked by hostility during the 1860s. A number of battles were fought during this period as a consequence.

In May of 1860 hostilities climaxed just west of the Winnemucca District at Pyramid Lake. In April Paiutes from surrounding areas congregated at Pyramid Lake for the purpose of determining the best strategy for dealing with the influx of white settlers. An Indian chief named Numaga attempted to convince the gathering of the inevitable futility of commencing warfare with the whites. However, his stand for peace was shattered when a group of Paiutes attacked a stage station, murdering the inhabitants and burning the building to the ground. A force of volunteers and enlisted men under the leadership of Major Ormsby headed for Pyramid Lake intent on retaliation and shouting the motto "An Indian for breakfast and a pony to ride." However, the Indians swiftly gained the upper hand over the inexperienced troops and slaughtered the fleeing forces of white men, including Major Ormsby. A second battle in June of 1860 ended in victory for the whites and left the Pyramid Lake Paiutes in a famished and homeless state. Peace talks were eventually initiated but conflicts between Indians and whites continued elsewhere (Angel 1881:149-64).

Paradise Valley was an area where ranchers and farmers were hard hit by the raids of predatory bands and many battles and skirmishes were fought in that vicinity during the 1860s. Fighting disrupted settlement and agricultural development of the valley by whites during this period and ended only when the Indians were subdued in 1867 (Goodwin 1966:7, Little Humboldt Sub-basin Section; Angel 1881:172-177).

Many of the settlers' troubles with Indians in Paradise Valley consisted of annoying acts of thievery, but others involved more serious threats to life and property. In a letter to Mrs. F. H. Buckingham, Mrs. Hufford, daughter of two of the original settlers of the valley described some of the difficulties her parents experienced with the Indians in those early days:

The indians (sic) seem to have no respect for private property, if it belonged to a tybo. They would take white mans property with the greatest impunity, and if they had the power in numbers used ruthless force in doing it, killing the white man if necessary. If they met a man on horseback they would always relieve him of his horse and gun or pistol and clothing generally killing him also. On one occasion while living on Havlin Creek a bunch of several bucks came along accompanied with as many squaws. They came to the Hufford place and demanded 'shy-muck' in an impudent "sassy" manner one buck slipped around to the back door went in and was rolling out a barrel of corn beef when he was discovered by Mrs. Hufford. This aroused her indignation and the ire of her Irish, seizing a heavy hoe she hit the Shoshone gentleman on the head, knocking him down. He did not get up right away, some of the squaws seeing what happed (sic) let out a tremendous shriek, and the whole bunch came a-running, and were thunder-struck to see a little white 'squaw' had done to one of their proudest warriours." (Hufford, 1947).

A letter by Paradise Valley pioneer H. W. Haviland reflects the settlers' point of view that their productive use of the land was better than the "savages'" traditional use of it. He states, "The Indians have a great desire to hold this country as it is fine hunting ground and in the heart of Indian country The valley has been shamefully neglected for so fine a farming country." (Humboldt-Register, September 1, 1866).

In the early 1860s, users of the Nobles Route were subjected to raids by mounted bands of Paiutes, labeled by some as "Bannock" Indians. Several Caucasians were murdered by Indian raiders during this period and rustling was also a frequent occurrence in the area. Ostensibly in an attempt to arrest Indian rustlers, a U. S. Cavalry division slaughtered 29 Indians, including a number of women and children, at their camp on Winnemucca Lake on March 14, 1865. This did nothing to quell the growing hostilities of the warring Indian bands. Initial U. S. Cavalry efforts to hunt down the Indian raiders were fruitless and concluded with the death of the leader of this campaign, Captain McDermit, in an ambush near the Quinn River in August 1865. However, the tide was turned when Captain Sou, the chief of the friendly Paiute band in the Unionville area, joined forces with the U. S. Cavalry and helped track down the bellicose bands. An Indian named Black Rock Tom, who was known by the white steed he rode and whose stronghold was in the Black Rock Desert, apparently was the leader of many of the

attacks. Captain Sou and the Cavalry tracked him and his band to Paiute Creek on the east side of the Black Rock Range but were unable to route the group from the natural fortress in which it was ensconced. However, the Cavalry returned to the area with reinforcements several days later and killed or captured most of Black Rock Tom's group. Black Rock Tom himself managed to escape but was later killed at Big Meadows.

The Fish Creek Valley Battle fought on January 12, 1866, most likely took place on Battle Creek on the east side of the Black Rock Range. This furious battle, which was fought in a dense cloud of freezing fog, resulted in most of the Indians being killed and the capture of the few survivors. This was the last major battle fought on the Black Rock Desert and only minor incidents of Indian trouble occurred after the Cavalry's victory in this battle (Wheeler 1978:78-136).

In 1911 minor hostilities flared up again. A small band of Shoshone killed a group of stockmen in Little High Rock Canyon. The Indians, led by Shoshone Mike Daggett, were tracked across northwestern Nevada by a posse, and on February 26, 1911, were all killed or captured on the Rabbit Creek Fork of Kelley Creek north of Golconda (Mack 1968; Hyde 1973).

Reservations

Establishment of reservations during the 1870s and 80s was effective in removing the majority of Indians from the public eye. However, some isolated bands remained at large returning to live for a time on the reservations. Excavations at Hanging Rockshelter, Last Supper Cave, and Denton's Cave in the High Rock Country document the existence of these bands which were dependent on rustling as late as 1918. Shoshone Mike Daggett headed one of these tribes and his group's demise at Kelley Creek in 1911 marked the virtual end of this way of life for the Indians in this area (Layton 1977).

During the 1880s Sarah Winnemucca Hopkins (daughter of Chief Winnemucca and granddaughter of Chief Truckee) pleaded with the U. S. Government to grant the Paiutes more land but her requests were not met. She was quite articulate in English and she toured the east pleading for better conditions for her people. She became well known through her lecture tours and the book she wrote entitled Life Among the Paiutes (Reiter 1978:209-215; Hopkins 1883).

There are two reservations in the Winnemucca District, Summit Lake and Fort McDermitt, and one, Pyramid Lake, adjacent to the District (see "Contemporary Cultures").

TRANSPORTATION

Between 1859 and 1860 F. W. Landers was in charge of developing the Nobles Route as a segment of the Honey Lake Wagon Road. After mining excitement

broke out in Idaho in 1862 the Idaho Wagon Route was opened incorporating portions of the Nobles/Landers Route. This road went from Chico and Susanville through Deep Hole, Granite Creek, Soldier Meadows, Summit Lake, and on to Ruby City, Idaho. A weekly saddle-train carrying mail and passengers also traveled over this route. Also along the route were connections which led to the Humboldt Range boomtowns during the time of greatest mining activity (1860s and 70s).

The earliest mail carrier, which preceded the Pony Express, was the Chorpenning-Woodward "Jackass Mail" service, as it came to be known, from Salt Lake City to Sacramento. During the years 1851-54 and 1858-59, a portion of the Chorpenning route passed along the Humboldt River (Goodwin 1966:3-6, Pine Valley Sub-basin Section). In 1864 and 1865 the Cutler and Westfield Pony Express, later the Humboldt Express Company, ran between Star City to Ginaca Bridge (Winnemucca) on to Willow Point, over Paradise Hill, and up the Quinn River Valley, the route of Highway 95 today. With Indian conflicts in 1865, the Humboldt Express Company ceased operations permanently.

Other freight and stage companies soon followed, most notable among them being Hill Beachy's Railroad Stage Lines. Hill Beachy initially opened a stage route from Unionville to Silver City, Idaho, in 1865 for the purpose of transporting supplies, mail, and passengers from the Humboldt mines to the newly discovered mines in southwestern Idaho. The stage route passed through Winnemucca to Willow Point Station on the Little Humboldt River, over Paradise Hill to Cane Springs, and continued north through the Quinn River Valley and on to Idaho. The duration of the stage line was a short two months due to stagecoaches and stage stations being burned by Indians. However, the route was reopened the following year as Hill Beachy's Railroad Stage Lines for the purpose of connecting the advancing Central Pacific railhead with the mining camps of the Humboldt Range and Idaho. In 1867, a cutoff was built from Oreana to Thacker's Station (north of Imlay) and along the west side of the Bloody Run connecting with the earlier route at Cane Springs. This shortcut bypassed Winnemucca, much to the disgruntlement of its residents, but in 1868 when the Central Pacific reached the town, the southern terminus of the Railroad Stage Lines was moved permanently to Winnemucca. The route continued to be used until 1870 at which time Hill Beachy shifted all coaches, horses, and stations to his new Elko-Cope-Boise City road (Goodwin 1966:6-12, Lovelock Sub-basin Section).

In 1868 G. A. Curtis and Company opened a stage line from Winnemucca to Scottville (Paradise Valley), setting up stations at the Tollhouse and Willow Point. The Tollhouse was located just north of the sand dunes between Winnemucca and Paradise, and the money collected here was used to finance a maintenance crew, which kept the drifting sands at bay by cutting sagebrush and packing it on the road.

In 1875 Rickard and Marker's stages began service from Winnemucca up Paradise Valley and across the Owyhee River to the mining towns of Cornucopia and Tuscarora. This route was also used by the freight wagons of the Silver State Flour Mill in shipping flour to these two towns.

The route of these stage lines from Winnemucca to Paradise Valley, which was also the route of Cutler and Westerfield's (1864-5) Pony Express and Hill Beachy's (1866-70) Railroad Stage Lines between Winnemucca and Willow Point, today is known as "the old Paradise Valley Road" and may still be traveled in its entirety except for a short section through the sand dunes. The Cornucopia-Tuscarora section of the stage road is the present road east along Shelton Lane from Nevada 8B, south of the town of Paradise Valley. The 1867 Hill Beachy cutoff, which runs through Silver State Valley to Cane Springs, is still negotiable by four-wheel-drive vehicles (Goodwin 1966:4-5, 14-15, Little Humboldt Sub-basin Section; 11, 16-17, Lovelock Sub-basin Section).

The Central Pacific Railroad began laying track eastward from Sacramento, California, in 1863 and was completed as far as Winnemucca in September 1868. On May 10, 1869, the final golden spike was driven at Promontory, Utah, where the Central Pacific connected with the Union Pacific Railroad (Myrick 1962:1-19).

The Central Pacific did not suffer the problems with Indians experienced by other transportation routes during this period due to its policy of granting free coach travel to all chiefs and free passage on freight trains to all other Indians (Myrick 1962:18-19). While this was a great boon to the railroad, it later proved to be the bane of Indian agents who bemoaned the difficulty of settling the Paiutes on reservations when they were roaming about the country in the cars of the Central Pacific (Steward and Wheeler-Voegelin 1974:238).

The original route of the Central Pacific followed the river through the Winnemucca District to the Humboldt Dike then proceeded along the Truckee River Route. In 1899 the Central Pacific Railroad company succumbed to years of financial trouble and sold out to the Southern Pacific Railroad. As part of its effort to make the railroad more efficient in 1902, the Southern Pacific tore up the tracks following the Truckee River Route through the Forty Mile Desert and rebuilt them along the Carson River Route. The stations at Parron and Huxley were built at this time as well as the section house at Ocala. The Overland Telegraph which had been built adjacent to the railroad in 1869 also was relocated in 1904 to parallel the new Southern Pacific Route (Bard et al. 1981:23-26; Bard et al. 1979: 15-16, 21-23, 26).

When the route of the railroad through the Forty Mile Desert was altered, the Eagle Salt Works which had been constructed adjacent to the original tracks was left in a precarious position. In an attempt to save his business from financial ruin the Southern Pacific Railroad Company loaned the owner money and agreed to take out only every other railroad tie between the salt works at Leete and Wadsworth. The resulting lightweight railroad was known as the Eagle Saltwork Railway. Despite these efforts, the Salt Works declined and the Southern Pacific foreclosed on the owner in 1910. The railroad company attempted in vain to make it a lucrative enterprise, but was forced to abandon it in 1916. The tracks were eventually removed (Bard et al. 1981:41).

The Western Pacific Railroad built a transcontinental line through Winnemucca in 1908. At this time, the towns of Sulphur, Jungo and Gerlach became depots along this route.

In 1898 a twelve-mile narrow gauge railroad began running between Golconda and Adelaid because of the copper boom at the latter. Use of this short line was very brief as the boom was over by 1900 (Paher 1970:154-56; Goodwin 1966:6-7, Sonoma Sub-Basin).

The Nevada Short Line Railroad was a twelve mile railroad which ran from Oreana on the Southern Pacific Railroad to Rochester. It was built in 1913, extensions added in 1914-15 and discontinued in 1918 after a cable tramway was established to move ore from the mines at Rochester to the mill (Myrick 1962:57-63).

Present-day Interstate 80 had its beginnings around 1917, when the old California Emigrant Trail and abandoned sections of the Central Pacific Railroad were combined to form an automobile highway. This was State Route 1 or U.S. Route 1, which became known as the Victory Highway, much of which was unpaved. In 1926 the highway became U.S. 40, a designation it held until only recently (Goodwin 1966:3-4, Synoptic History Section).

ADDITIONAL READING

Angus n.d.	Galloway 1950	Rand et. al. 1876
Brown 1977	Hafen 1926	A. Correct Map of the
C.P. Railroad 1875	Kneiss 1954	U.S....1896
Earl 1978	Maupin 1961	Steinberg 1981
Edaburn 1981	Nevada H. & P. 1953	U.S.D.I., G.L.O. 1876
Frickstadt et al. 1958	Nyland 1981	& 1886
		U.S.P.O.D. 1898
		U.S.S.G.O. 1882 & 1890

ESTABLISHMENT OF LOCAL POLITICAL BOUNDARIES AND GOVERNMENTS

Most of the Great Basin, including Nevada and the Winnemucca District, was claimed by early Spanish explorers for their mother country. The vast territory known as New Spain included everything south of the Oregon Country (approximately the 42nd parallel) and extended west from the crest of the Rocky Mountains to the Pacific Ocean. Spain yielded her claim to these lands to the Republic of Mexico in 1821 after Mexico won its independence from Spain. While under Mexican jurisdiction, Winnemucca District was included in the Mexican territory known as Alta California. Mexico, like Spain before her, made little effort to explore or settle present-day Nevada and enforcement of her claim was very loose. Although Mexican authorities in California ordered Jedediah Smith to return through Nevada in 1827 by the same route which he entered it in 1826, he met with no retaliatory action when he disregarded their command. Many other trappers, explorers, and emigrants blatantly trespassed the Mexican-claimed territory during the first half of the nineteenth century without encountering any active resistance on the part of the Mexican government (Stegner 1979:45; Mack 1936:59-62; Hulse 1978:30-35).

In 1848, after the victory of the United States in the Mexican War, the Treaty of Guadalupe Hidalgo was signed and the territory which included most of present-day Nevada became the property of the United States (Hulse 1978:59).

From 1848 to 1850 Nevada lands were part of California and included in the administrative unit known as Washoe County. When California was preparing to apply for statehood, one faction at the constitutional convention in 1849 promoted the inclusion of Nevada and all the territory between the crest of the Rockies and the Pacific Ocean within the proposed California state boundaries. However, the arguments of advocates of a smaller, more manageable state triumphed and California became a state in 1850 without the Nevada lands (Mack 1936:145-146).

One year before the United States came into possession of the Mexican-held lands, most of the present State of Nevada (including the present Winnemucca District) was claimed by the Mormons as part of the free and independent State of Deseret. The theocratic state, with its capital at Salt Lake City, was envisioned by Mormons as a refuge where they could live and worship in the manner their religion dictated, unmolested by "gentile" antagonists. Brigham Young, the leader of the Latter Day Saints, conceived the idea of colonizing the Great Basin lands after reading Fremont's descriptions of this unsettled territory. In 1847 he gathered together his followers and led them to the Great Salt Lake to establish the first and major settlement of the Kindgom of Zion. The lands claimed to be part of Deseret extended north from latitude 33 to the border of Oregon and from the Rocky Mountains west to the Sierra Nevadas (Hulse 1978:65-67; Mack 1936:143-145).

In 1850, Congress created the Territory of Utah which encompassed most of the present states of Nevada (including the present Winnemucca District) and Utah and parts of Colorado and Wyoming. Despite the conflicting claims, the Federal and Mormon governments co-existed in the Utah Territory for a time with Brigham Young being appointed as the first governor of the Utah Territory at Salt Lake City.

The Mormons made no effort to stem the flow of gold rush traffic which passed through their claimed territory since profits obtained from the sale of supplies to emigrants enabled Salt Lake City and other settlements to survive and prosper (Hulse 1978:67-68; Mack 1936:146; Bard et al. 1981:16-17). By 1850 and 1851 Mormon trading stations and settlements commenced in the Carson Valley. Since Salt Lake City was too far distant to govern the western part of the Utah Territory effectively, a squatters' government was formed in Carson Valley in 1851 for this purpose. Settlers moving into the Carson Valley from California became disgruntled with the squatters' government and the Mormons and circulated a petition which advocated annexation of the western Utah Territory by California. Fearing loss of control of these lands, Governor Young decided to establish a county government there and to send more Mormons in to populate the area. In 1854, the Utah Territorial Legislature created Carson County, establishing the county seat at Genoa in the Carson Valley. Part of Winnemucca District was included in Carson County. The Mormon dominated government created much hostility among non-Mormon settlers and in order to prevent these dissenters from seizing control, the government of Carson County was removed to Salt Lake City in 1856 (Hulse 1978:67-73; Mack 1936:147-165).

President Buchanan removed Brigham Young from his position as governor in 1857 because of national distaste for the polygamous practices of Mormons, claims of mistreatment and defiance of Federal law and resentment by non-Mormon settlers and emigrants.

When Federal troops were ordered to take control of Salt Lake City, Young recalled all Mormons to Salt Lake City to help defend against the impending seige. Responding to this call, Mormons abandoned their Nevada settlements. Despite this resistance effort, the army did eventually gain entry to the city in 1858 and Mormons relinquished their claim to their Kindgom of Deseret to become citizens of the United States (Mack 1936:167-172; Hulse 1978:72-73).

The Territory of Nevada was created in 1861 and became a state in 1864. Humboldt County was one of the first nine counties of the Territory, and included present day Pershing County. Unionville was the county seat until 1873 when the county seat was moved to Winnemucca. This change in the location of county administration was prompted by the general decline in mining in the Humboldt Renge and the concurrent growth of Winnemucca's importance as a shipping and transportation center. Although the county was created in 1861, Humboldt County government was not well organized until 1863. Consequently, county records are practically non-existent for its early years. The first tax roll for the county was compiled in 1864 (Georgetta 1972; Paher 1970:139). In 1919 Humboldt County was divided, the southern portion became Pershing County and the northern section remained Humboldt County. Lovelock was named county seat of Pershing County at the time and remains so today (Georgetta 1972:469-470; Hulse 1978:164).

The western portion of the District, which today is part of Washoe County, initially was part of Lake County, one of the original nine counties of the Territory of Nevada. The name of Lake County was changed to Roop County in December of 1862. This county included all of the present Washoe County north of the Truckee as well as Modoc, Lassen, and Plumas counties in California. The County seat was at Susanville. Due to uncertainty over the boundary between California and Nevada at the time of territorial organization, it had been assumed that Honey Lake Valley, in which the wealth and population of Lake/Roop County was concentrated, was part of Nevada. When Plumas County, California, also claimed Honey Lake Valley, a dispute arose. By 1864 the dispute had been settled and Honey Lake Valley officially became part of Plumas County. Without Honey Lake Valley, Roop County was merely a large tract of barren and sparsely populated land. Thus, in February of 1864 an act was passed attaching Roop County to Washoe County for judicial and revenue purposes (Mack 1936:398-99; Angel 1881:563-4). The portion of the District which once was part of Lake/Roop County includes large portions of the Granite Range, the Fox Range, the Buffalo Range, the Buffalo Hills and the Smoke Creek Desert as well as present day Gerlach and Empire.

Churchill County, which includes the southernmost portion of the District, was also one of the original counties of the Territory of Nevada and was established July of 1861 (Harris 1973:7).

ADDITIONAL READING

Force 1933

MINING INDUSTRY

Mining has exerted a profound influence in the District through much of the historic period. It was the discovery of gold in California which drew thousands of Americans through the District during the middle of the

nineteenth century and it was the silver strikes in the Humboldt approximately a decade later which brought large scale settlement, and agricultural and commercial development. Since then, mining has been a large but erratic contributor to the local economy due to its historic pattern of "booms and busts." According to Loomis and Closson (1980), the "wide up and down fluctuations" the industry is subject to are "due to its dependence on several unstable factors: international markets, uncertain future of discoveries, rapid exhaustion of ore, and rapid changes in technology."

Many times during the history of the study area mines and mining districts have lain idle for many years after the end of a boom period only to burst into life again. This occurs for a variety of reasons. An area may still have large quantities of ore in the ground yet suffer from economic depression because the price of ore is too low to permit profitable mining. Sometimes a use for a mineral develops which did not exist when the mine was discovered. Thus, minerals that were not originally regarded as being important have proved to be promising in later years. Also, technical innovations have made possible more complete extraction of minerals than originally was possible.

Mining activity has also been affected by Federal actions such as historically permissive mining laws, the Sherman Silver Purchase Act and its repeal and recently more stringent and environmentally-conscious controls on mining. The perpetration of mining hoaxes by speculators has also been a stimulus for brief mining flurries in the District.

Silver was the major mineral mined in the District during the boom period of the 1860s. Gold was the most important mineral in the boom of 1870-90 in northern Paradise Valley as well as in the booms of the early 1900s and 1930s and presently it is enjoying a renaissance in the Getchell and Pinson Mines due to increased prices and new methods of extraction. Copper, iron, mercury, and tungsten are minerals which have also contributed significantly to the local economy. Salt, lime and sulfur were mined in the early days of mineral exploration and antimony, gypsum, and diatomite are mined currently. Extensive uranium prospecting is also being done in the northern part of the District (Loomis and Closson 1980:37-38; Jones and Loomis 1979:19-20).

Both hard rock and placer mining have been undertaken in the District. Numerous mills have been constructed for processing of ore as well as evaporators for salt processing.

Mines and mills in the District are much too numerous for detailed treatment here. The following is merely a discussion of the highlights of the mining industry in the District and of salient socio-cultural events associated with it. For more information on specific mines, mining districts, minerals produced, and production figures and value see USDI, BLM Mineral URAs (1979), Couch and Carpenter (1943), Vandenberg (1976), Wilden (1964), Wilden and Speed (1974), and Bonham (1969).

James Hardin, an emigrant, found the first precious mineral in the Winnemucca District in 1849 in the Black Rock Range. While hunting for game for the wagon train, he and his companions came upon a ravine littered with pieces

of shiny rock. Taking it to be lead, they gathered up some 30 to 40 pounds of it. Back in camp they melted part of it down and formed it into bullets. Hardin pocketed a piece of the ore and took it with him to California but it wasn't until several years later that he had it assayed and found that it was rich in silver. He and a party of men tried unsuccessfully to relocate the silver ledge in 1858 but neither they nor anyone else has ever found it. A mill (Hardin City) was built in the area in 1866 when it appeared that a silver ledge had been located, but nothing ever really came of it (Jones 1980:59; Wilden 1964:8).

It is ironic that while the 49ers rushed along the Humboldt, intent on reaching the envisioned gold-laden hills of California, they were passing by ranges rich in silver. The first miners had looked only for placer gold but the discovery of silver at the Comstock Lode caused prospectors to turn their attention to locating rich underground veins in other parts of the State. Some of the earliest strikes in Nevada, and the first rich strikes in the study area, were in the Humboldt Mining District where mining activity began in 1860 (Wilden 1964:81-82; Roberts 1980:108). (Lower grades of silver had been found near present Tungsten as early as 1856 and in the Trinity Range 5 miles west of Oreana in 1859 (Bard et al. 1981:37; Paher 1970:135)).

The discoveries generated much excitement and speculation. Prospectors such as Samual Clemens (Mark Twain) flocked from the Comstock Lode to the Humboldt strikes. In Roughing It he describes the enthusiastic response in Virginia City to the Humboldt strike and other silver discoveries being made throughout Nevada in 1860:

Every few days news would come of the discovery of a brand-new mining region; immediately the papers would teem with accounts of its richness, and away the surplus population would scamper to take possession....'Humboldt! Humboldt!' was the new cry, and straightway Humboldt, the newest of the new, the richest of the rich, the most marvelous of the marvelous discoveries in silver land . . . (Twain 1962:152).

Clemens goes on to quote from an article in the Territorial Enterprise and his reaction to it:

Humboldt County is the richest mineral region upon God's footstool. Each mountain range is gorged with the precious ores . . . The other day an assay of mere croppings yielded exceeding four thousand dollars to the ton! . . . (Twain 1962:153).

Clemens says "This was enough. The instant we had finished reading the above article, four of us decided to go to Humboldt" (Twain 1962:155). Clemens and his friends subsequently went to the Unionville area. Clemens' description of his naive expectations, the ecstasy of his treasure hunt and his eventual disillusionment were typical of many greenhorn prospectors:

I confess, without shame, that I expected to find masses of silver lying all about the ground. I expected to see it glittering in the sun on all the mountain summits . . . I was as perfectly satisfied in my own mind, as I could be of

anything, that I was going to gather up in a day or two, or at the furthest a week or two, silver enough to make me satisfactorily wealthy. . . . The first opportunity that offered I sauntered carelessly away from the cabin, keeping an eye on the other boys, and contemplating the sky when they seemed to be observing me. Then I began my search with a feverish excitement that was brimful of expectation - almost of certainty Presently I found a bright fragment and my heart bounded! I hid behind a boulder and polished it and scrutinized it with a nervous eagerness and delight I was convinced that I had found the door to fortune Of all the experiences of my life, this secret search among the hidden treasure's of silver land was the nearest to unmarred ecstasy. It was a delirious revel. By and by in the bed of a shallow rivulet, I found a deposit of shining yellow scales a gold mine and in my simplicity I had been content with vulgar silver! (Twain 1962).

Clemens proudly displayed his treasure to an experienced miner and received a disheartening evaluation of it:

Think of it? I think it is nothing but a lot of granite rubbish and nasty glittering mica that isn't worth ten cents an acre! . . . So vanished my dream. So melted my wealth away. So toppled my airy castle to the earth and left me stricken and forlorn (Twain 1962).

Clemens and his partners eventually did find an outcropping of silver ore, named it "Monarch of the Mountain," and blasted a tunnel. However, after learning the work which would be required to extract the ore and the expense involved in processing it, Clemens "resigned" from mining and left Unionville. His closing comment reflects his observation of the speculators who were usually associated with a mining strike:

We never touched our tunnel or our shaft again. Why? Because we judged that we had learned the real secret of success in silver mining - which was not to mine the silver ourselves by the sweat of our brows and the labor of our hands, but to sell the ledges to the dull slaves of toil and let them do the mining (Twain 1962:168).

Although Clemens and his friends left Unionville, many others remained and were well rewarded for their efforts. Almost 1,000 people lived in Unionville in 1863 and the Arizona mine "poured forth its treasures" until about 1873 (Paher 1970:136-9; Browne 1972:146). Nearby Star City, the largest town in Humboldt County in 1863 with its 1,200 residents, was supported by the Sheba Mine and its 10 stamp mill at the mouth of the canyon, as well as by other mines. George Hearst, father of newspaper magnate William Randolph Hearst, owned the Sheba Mine and Mill and reportedly made the beginning of his immense fortune there. Silver mining started in Star Canyon in 1861. The most prosperous years for mining in this area were 1864-5. Ore at the Sheba ran out in 1868 and the stamp mill was moved to Unionville (Paher 1970:136).

Many other smaller strikes were made in the Humboldts, the East Range, and the Trinity Range during the early 1860s as well as at Vicksburg (Ashdown) in the Pine Forest Range. Many of these mining operations were of very short duration and most died out by the end of the century. As no new large deposits were found and the grade of the ore of the early strikes decreased, interest in the area faded and there was little activity after the early 1870s in the ranges flanking the Humboldt River (Wilden 1964:82; UDSI, BLM Denio Minerals 1979:3; Browne 1972).

In addition to many mills which were constructed close to the mines, several mills were built along the Humboldt River during the 60s including those at Etna, Torreytown, Rye Patch and Oreana (Bard et al. 1981:38; Browne 1972). According to Wilden, "In the 1860s several smelters were erected along the Humboldt River and at least 16 smelters were built in the various districts of the county (Humboldt)" (Wilden 1964:82). In 1862 the Humboldt Canal scheme was conceived for the purpose of powering a huge mill, to be built at Mill City, which was to process the minerals from all around. The canal project turned out to be an expensive fiasco, however, and the mill was never built (see "Irrigation and Reclamation"). Since the mines nurtured the mills, most of these had also ceased operations by the early 70s (Browne 1972).

Non-metallic mineral exploration also began during the 1860s. Salt works providing the salt used in the milling process as well as for livestock use were started on the western edge of the Smoke Creek Desert at Buffalo Meadows in 1864; in the Forty-Mile Desert the Eagle Salt Works were started in 1869 and the Desert Crystal Salt Works in 1870.

Later, in 1902, Kinney Saline Deposits built a salt works near Parran Station. Sulfur production began at Sulphur in 1874 and lime production began near the station at Huxley in 1910. Most of these endeavors had ceased operations by 1915 (Bard et al. 1981:40-43; Amesbury 1967:22).

In 1873 gold mining began in the Red Hills on the north side of Paradise Valley and later that year the Mount Rose Mining District was formed. A mining boom commenced in this district in 1878, tapering off toward the end of the century (Goodwin 1966:6, 11-12, Little Humboldt Sub-basin; Wilden 1964:82; Browne 1972:19). Some mining was also done at Varyville in the northern Black Rock Desert and at Poker Brown in the Trinity Range during the 1870s. Mining activity at both of these was of short duration (Paher 1970:149; Browne 1972:44).

The repeal of the Sherman Silver Purchase Act in 1893, followed by the defeat of free silver coinage advocate William Bryant in the presidential race in 1896, had a disastrous effect on the primarily silver based mining industry in Nevada. With government controls no longer in effect, the price of silver plummeted, and silver mining declined drastically throughout the state (Welch 1981:17; Goodwin 1966:4, Synoptic History; Paher 1970:333).

After the turn of the century, however, mining again increased in Nevada and the study area. The most prominent discovery in the Winnemucca District

was made in the National District in the Santa Rosa Range in 1907. Some of the richest gold ore in Nevada was extracted from this district between 1908 and 1915. Rich silver ore was mined here as well. Other new mining activity occurred in the areas around Buckskin (1906-1930), Daveytown (1910-1930s) and Awakening (1912). Gold and silver mining commenced in the Seven Troughs Range at several locations and lasted from about 1905-1918. Tungsten mining began in Tungsten (1916-1958) and at Nightingale (1917-1930). Renewed mining occurred at older mining districts such as in Paradise Valley and at Rebel Creek (Lincoln 1923:97, 100-102; Goodwin 1966:12-14, Little Humboldt Sub-basin; Paher 1970:148, 149, 151; Browne 1972:16-18, 42-46).

The revitalization of old gold mining towns and the birth of new ones in the west during the early 1900s was stimulated at least partially by the development of the cyanidation process at the turn of the century which made possible virtually 100% extraction and resulted in "the richest of all gold rushes" (Wallace 1976:21).

During the 1920s mining in the District declined but during the depression years of the 30s it revived again as it did throughout the west during this period. The discovery of the Jumbo gold mine in the Slumbering Hills in 1935 was largely responsible for stimulating renewed activity in many of the old mining districts of the study area. Ex-President Herbert Hoover's visit to the Jumbo Mine in the summer of 1936 brought national attention to the mine. He reportedly came to the mine to investigate a claim that gold coins were being melted down illegally. The report was apparently unsubstantiated, but Hoover was so impressed with the Jumbo Mine that he offered to buy it from the owner George Austin for a generous sum. Austin did not accept the offer. While visiting the Jumbo Mine, Hoover stayed at the no longer existing Jungo Motel (Butts 1981; Paher 1970:148).

The Getchell Gold Mine, opened in 1933, was Humboldt County's leading mining property until 1945 when the oxidized ore was largely exhausted. In 1942 an executive order caused all gold mines to be closed so that labor could be channeled into industries which were supporting the war effort; however, the Government allowed the Getchell Mine to remain open because of the high arsenic content of the ore. In 1948 a mill was built there utilizing a new process. A critical shortage of tungsten at the beginning of the Korean War in 1950 and ignorance concerning domestic supply led the government to encourage tungsten exploration and production through sponsorship of a tungsten purchasing program. This stimulated the owners of the Getchell Mine to convert to a tungsten producing operation in 1951. The end of the government purchasing program brought tungsten production at the Getchell Mine to an end in 1957 and at Tungsten, where production had also been stimulated, in 1958. Getchell operated as a gold mine again from 1966 to 1967 when it was dismantled. Operations have recommenced at Tungsten due to higher prices and more advanced extraction techniques (Hulse 1978:199; Paher 1970:157, 135). George Wingfield, a prominent Nevadan who owned a chain of banks in Nevada before the depression as well as the Riverside Hotel in Reno was one of the partners in the Getchell mine (Georgetta 1972:425).

During recent years there has been an upsurge in prospecting activity in the Winnemucca District and large mines such as Tungsten and Pinson have opened or reopened. This has been due to a sharp rise in prices, particularly for silver and gold, as well as to "improvements in . . . technology making the extraction of minerals from lower grades and hard-to-get-at ores economically feasible" (Loomis and Closson 1980:37).

In addition to those mentioned above, large mining operations presently active in the District include the Eagle-Picher diatomite mine and processing plant near Lovelock, and the McDermitt Mine mercury mining and milling site near McDermitt. The latter is the only major mercury mine in the United States and annually produces one third of the U.S. annual consumption of mercury. Also iron deposits are being exploited in the Jackson Mountains and extensive uranium prospecting is underway in the Montana Mountains (Jones and Loomis 1979:19-20; Loomis and Closson 1980:37-39).

Physical traces of mining in the District include processing equipment, structures, various machine parts, and mill tailing dumps. Hard-rock mining is evidenced by the presence of mining tunnels "with timbering at the adit and inward for the first few feet to hold back the crumbling rock" and sometimes rails over which the ore was transported to the mill (Roberts 1980:157). Shafts with sky-scraping headrigs to lift the ore from the depths of the earth are another evidence of hard-rock mining as well as rusting machinery of various kinds. According to Roberts:

The waste from mining may appear in two forms. That which is piled on the level is known by the generic name of chat. Tailings, on the other hand, are the waste washed down or that having fallen down from the side of a cliff. An adit would be expected at the source. Both if examined will be found to be alien to the earth around since the mined earth has not been subject to the same oxygen weathering process that the topsoil has (Roberts 1980:157-158).

Placer mining is sometimes evidenced by the remains of dredges in or near natural bodies of water or man-made reservoirs. Often there is little to be found at placer mining sites except the remains of habitation. Since placer mining in the Winnemucca District was often practiced by the Chinese, artifacts associated with this ethnic group are frequently found in the vicinity of placer mining sites.

Often milling and mining equipment were removed to another site when the ore died out of the original site. Thus, there are few physical remains at some mining sites. Relic collectors have also removed artifacts and many mining and milling sites are in a poor state of preservation because of neglect and physical causes (Welch 1981:20-21). (See Bowers and Muessig 1982 and Wagner 1970 for more thorough descriptions of mining technology, artifacts, and site types.)

ADDITIONAL READING

Gianella 1945
Glass 1969

Wagner 1970
Wallace 1976

Welch 1981

AGRICULTURE

Agricultural endeavors have been a major use of the District lands since the first settlement during the 1850s. Trading stations and mining created demands for food and livestock which caused the initial establishment of small farms. Although the demands subsided, the advantages of the vast acreages of public lands for grazing livestock were recognized and large cattle operations were established during the 1860s and 70s. Large nomadic sheep operations also started up during this period and by 1880 sheep were the dominant type of livestock raised in the District. Their preponderance continued until about 1945 when they were outnumbered by cattle. Farming, which had always been undertaken to some extent, expanded in support of the livestock industry after 1890 when winter feeding of cattle became common practice. Irrigation and reclamation have helped to steadily expand the cultivatable acres in the District since 1900.

By the early part of the 20th century maximum numbers of sheep, cattle, and horses were grazing on the public lands. Range depletion eventually led to the passage of the Taylor Grazing Act in 1934. The intention of this act was to save the public rangelands through controls administered by the Grazing Service which eventually became the BLM. Cattle ranching became the dominant livestock industry during the 40s when sheepmen went out of business because they could not satisfy the base property requirements of the Act and also because of the Great Depression. Beef has remained the District's primary livestock product, but farming has become the larger economic contributor, particularly in Pershing County.

Agriculture has historically been a major contributor to the local economy and to the local labor force. Agriculture is still the most important industry in Pershing County, where sales of alfalfa hay and seed are of particular importance. In Humboldt County gambling and tourism have taken over the leading economic role historically shared by agriculture and mining, but agriculture is still held in high regard by local inhabitants because of its past contributions to the cultural and economic development of the area (Loomis and Closson 1980; Jones and Loomis 1979; USDI, BLM 1981a; USDI, BLM 1981b: 2-32 to 2-35).

Farming

The earliest attempts at cultivation by Caucasians in the District were probably the garden plots at trading posts which were established along the emigrant routes during the 1850s. More extensive farming endeavors were initiated during the early 1860s in response to the demand created by the flurry of mining activity in the Humboldt Range. Miners required hay and grain for their horses, mules, and other livestock as well as flour, potatoes, dairy products, fresh vegetables and fruits for their own consumption. In that age of horse power, ample supplies of feed for the teams which

pulled the wagon loads of ore and helped to power the mills were of particular importance. During the early days of the mining boom most of these products were imported from California and sold to the prospectors at extremely inflated prices. Perceiving the ready market for farm products and the potential of some of the surrounding countryside for agricultural development, a number of persons who had originally been drawn to the area by the lure of silver traded in their picks and shovels for farming implements and proceeded to try their hand at taming the land (Hulse 1978:156; Creel 1964:6-7).

Paradise Valley, which developed into one of the most important agricultural areas in the District, got its start in just such a manner. In June of 1863 four silver seekers departed Star City in the Humboldt Mining District on a prospecting tour of the nearby countryside. Arriving at Rebel Creek on the west side of the Santa Rosa Range, they followed the creek to its source. Ascending the mountain range to its crest, they looked down upon a beautiful wide green valley. Upon sighting this apparent "oasis," one of the party, W. B. Huff, exclaimed, "What a paradise." Thenceforth, the valley was known as Paradise Valley (Angel 1881:445).

The four men lost no time in staking claim to choice parcels of land in the valley. According to Thompson and West, one of the four, W. C. Gregg, returned the following month with "fourteen head of horses, wagons, mower, haypress, and blacksmith tools" and "during the season he cut and baled two hundred and fifty tons of hay, the most of which he sold at remunerative prices at Star City and Austin" (Angel 1881:445).

In 1864 several others moved into the valley, built sod houses and cultivated small patches of land in vegetables. On March 6, 1864, Richard Benchley and Charles A. Nichols plowed the first furrow and the first grain was planted 6 days later. The first crop of wheat exceeded all expectations, 1,000 bushels were threshed from forty-five acres planted. Despite the auspicious beginnings, agricultural development in the valley was stymied by problems with Indians in the area (Angel 1881:445).

Due to constant harassment by the Indians many settlers abandoned their farms. In a letter to the editor of the Humboldt Register on September 1, 1866, settler M. W. Haviland described the frustrating problems of farming the Valley:

We are very much exposed here since we are few in number and scattered over the distance of 25 miles. The Indians have great desire to hold this valley as it is a fine fishing and hunting ground and in the heart of Indian country. There are at present eight soldiers here at intervals who say they are to remain here till after harvest. We have had troops here at intervals at which time parties have been induced to invest their all in the enterprise of farming, and by the withdrawal of these troops, these parties were left at the mercy of these savages. The valley has been shamefully neglected for so fine a farming country.

Despite the difficulties involved, a few families persisted in their farming endeavors and raised hay, wheat, barley, fruits (primarily apples), dairy products and garden vegetables for sale to the mining camps of central Nevada and southwestern Idaho. The Silver State Flour Mill constructed in 1868 on Martin Creek provided valuable aid in processing the valley's flour (Angel 1881:446).

Fort Winfield Scott was built in 1866 but it wasn't until 1869 that the efforts of the military in the area had suppressed the hostile activities of Indians in the valley and agricultural development was able to proceed unhampered. Military posts such as Fort Winfield Scott also promoted farming in the District by providing an additional market for farm products (Angel 1881:445-6).

The other major area of farmland to be developed in the District was the Lovelock Valley. During the days of emigrant travel, the Lovelock Valley was known for its lush grasses and was referred to as "Big Meadows." In 1881 Thompson and West assessed the agricultural potential of the valley and other lands along the Humboldt as follows:

The Humboldt Valley east of the Great Bend (near present day Imlay) is nearly worthless for agriculture, but after the river passes through the West Humboldt range of mountains and turns toward the south, the valley becomes wider, grassy meadows take the place of the sage-brush flats, and finally the great meadows are reached. Those who crossed the plains with teams before the time of the railway will remember that unbroken, even untrodden miles of the finest grasses, waist-high, covered these natural lawns, 50,000 or more animals halting there had only cropped away the outer edge, so extensive was the range. The Valley here capable of cultivation is some thirty miles long and twelve miles wide, the Humboldt River running along its southeastern side (Angel 1881: 445, 454).

The first ranchers and farmers settled in the Lovelock Valley in the 1860s. James Blake and his family began farming lands there soon after, and established a trading post in 1861. By 1905 Bragg was describing this valley as the "richest agricultural valley in the state." Major crops for this region at the turn of the century were hay and wheat (Hulse 1978:225; Bard et al. 1981:33, Bragg 1976:85).

In addition to Paradise and Lovelock Valleys, many other valleys and basins in the District were farmed. Thompson and West, describing Humboldt County in 1881 stated, "In the northern and eastern portions of the county are many fine valleys which for beauty and fertility have no superiors and few equals" (Angel 1881:444).

Farming in the District, especially in these early years was severely restricted by climate and topography. Large portions of the District were arid lands which were useful agriculturally only for the grazing of range livestock. Additionally, thousands of acres of alkali flats and rocky barren slopes were worthless for agricultural pursuits of any type. Early farming endeavors therefore were restricted to those areas where permanent water sources were available and where the land was otherwise suitable for farming. The ever present threats of droughts and freezes imposed additional limitations on farmers. Consequently, they generally raised only hay, hardy fruits, and vegetables which did not require a long growing season (Hulse 1978:156).

Hulse portrays the character of early agriculture in Nevada as follows:

Nevada's climate and topography would not permit the intensive farming which Americans of the Middle West and California knew. Few valleys and mountains had water and therefore greenery was sparse. Nevada's pioneer agricultural activities were often performed on lonely ranches nestled on the edge of a stream-producing mountain range or the side of a barren looking valley. By the middle of the 1870s, nearly every life-giving stream big enough to support a garden and a field of hay had been claimed (Hulse 1978:156).

In the course of his tour of Humboldt County ranches in 1905, Bragg confirmed the above, saying, "In the present, every spot where there is water has been taken up and shows that some human being has his eye on some spot where something besides horned toads will mature. . . ." (Bragg 1976:10).

Despite the restraining conditions early Humboldt County farmers operated under, they were generally successful at the farming ventures which they had undertaken. On November 16, 1866, the Humboldt Register published this enthusiastic appraisal of Humboldt County agriculture:

Humboldt county alone is capable of producing all the hay, grain, and vegetables needed by the present populations of the State. Garden vegetables are here in superabundance. They are a positive drug on the market. Wheat, corn, barley, oats, rye and sorghum grow luxuriantly and ripen thoroughly. When the railroad comes to carry off the surplus of the farms, look out for farming here on an Illinois scale (Angel 1881:182).

The 1870 and 1880 census data for Humboldt County indicate that hay was the most important crop at that time, followed by barley, potatoes, and wheat. Oats, vegetables, and fruits were marketed in much smaller quantities. Apples and peaches were the most abundant orchard products; the Surveyor-General of the State reported in 1874 that 3,000 bushels of apples and the same amount of peaches grown in Humboldt County that year had been marketed (Creel 1964:7).

The shift to winter-feeding of cattle, which began on a large scale locally after the disastrous winter of 1889-1890, resulted in a large increase in hay production in the District in the succeeding years. Between 1890 and 1900 hay production for the county increased from 23,208 tons to 103,434 tons. Bragg's report of his tour of the county ranches in 1905 indicates that, for the most part, live-stock operators grew and cut hay on their property for the consumption of their own herds. Some farmers, predominately in the Lovelock Valley, marketed their hay. Most of the latter was sold in the local area rather than being exported. As Bragg said in 1905, "The hay mostly went out in beef and mutton" (Bragg 1976:85).

In 1900, 56% of the hay raised in Humboldt and Pershing counties was alfalfa while 42% was native grasses cut for hay. The remaining 2% included grains cut green for hay, millet, and other cultivated grasses. These proportions remained fairly constant in this area until the mid 1950s when alfalfa production jumped to 83% of the total hay crop for Humboldt and Pershing Counties. It has continued to be the dominant hay crop through present times (U.S. Bureau of the Census 1900-1978, Humboldt and Pershing Counties).

While the availability of outside markets resulted in the growth of the livestock industry and associated hay production during the 1880s and 90s, during this period of declining mining activity many small farms which had been dependent on mines in remote areas died with the camps which they had nourished (Hulse 1978:156; Creel 1964:7). Bragg's notes on his tour of Humboldt County ranches in 1905 indicate that at that time a few small-scale farmers supported themselves by raising and marketing agricultural commodities in Winnemucca, Lovelock, and other local towns. Some livestock operators supplemented their income in this manner as well. The agricultural census for Humboldt County for 1900 indicates that wheat, barley, potatoes, chickens, and eggs were the major marketable farm products, other than livestock products and hay. Apples, oats, and honey were produced and sold in lesser quantities. Small amounts of other fruits, garden products, other poultry and swine were also marketed or traded (Hulse 1978:156; Creel 1964:7; U.S. Census 1900, Humboldt County).

By the turn of the century, however, most farming in the District, other than hay production, was for home consumption. Most ranches visited by Bragg produced a full range of farm products for their own consumption, many of them having to buy only coffee, tea, and sugar. Several ranchers did not even have to buy sugar because their beehives provided them with honey as well as wax. Typically, a ranch had a few cows to provide dairy products, a flock of chickens (and/or other poultry) for eggs and Sunday suppers, a few pigs for bacon, ham and pork, a vegetable garden and an orchard. Orchards frequently were quite large with as many as 1,200 trees reported. In 1874, the Surveyor-General of the State commented on the farmers' propensity for orchards:

Whether he comes from the land of the orange or the apple, the first thing after building a shelter, the farmer sets out an orchard. What is a home without fruit trees? He who plants fruit trees is intending to stay! (Creel 1964:7).

Apples were by far the most bountiful fruit crop; 4,903 bushels were reported for Humboldt County in 1900. Other orchard fruits grown were pears, peaches, nectarines, cherries, plums, prunes, apricots, and quinces. Small fruits included gooseberries, loganberries, raspberries, blackberries, strawberries, currants and grapes. Elderberry wine was made by some residents (Humboldt Register, September 8, 1866). Grapes, hops, corn, and potatoes were also available for manufacture of alcoholic beverages and were used for this purpose in at least some instances. In Paradise Valley William Kirshner operated a lager beer brewery in the basement of his adobe house on Cottonwood Creek. Italians in Paradise Valley reportedly carry on a tradition today of going to California in the fall to bring back Zinfandel grapes for wine-making (Marshall and Ahlborn 1980:8). During the prohibition period there were also various private stills; one large one was located in the back room of the Martin Hotel in Winnemucca. When federal officers discovered it and emptied the contents, the alcohol reportedly flowed down Lay Street, a dirt road at the time, to the river. It formed a puddle in a depression at the corner of Lay and Second where "winos" used tobacco tins to dip sips of it (Lecumberry, January 1981).

After the turn of the century the major influence on the farming industry was the development of irrigation and reclamation projects.

Irrigation and Reclamation

From its infancy in the District, agriculture was restricted in nature and extent by the scarcity of surface water and the persistent threat of drought. Of the four principal streams in the district, the Humboldt, the Little Humboldt, the King and the Quinn, only the Humboldt consistently flows year-round. The others swell up in the spring, flood the flats and the valleys, but carry little or no water the remainder of the year. Limited amounts of water are supplied by ephemeral streams after the spring melt and by the numerous springs located throughout the District. The dearth of surface water precluded habitation and cultivation in most of the District during the nineteenth century, including some very fertile areas. In addition, by 1900 nearly all the land irrigatable from permanent water sources had been filed on and expansion of agriculture was stymied (U.S. Bureau of the Census 1890:185-6; 1900:847-850).

During the nineteenth century virtually all of the irrigation in the District was from streams. The principal body of irrigated land was along the Humboldt River, particularly in Lovelock Valley. The first irrigation ditches were excavated here between 1861 and 1862. Due to the low level of land in the Lovelock Valley, much of it was irrigated naturally by the annual spring rise of the river. Dams were also built across the river at various points diverting the water and causing large areas to be overflowed. During extremely wet years, however, there was actually an excess of water, and crop production was adversely affected by prolonged periods of flooding. The Humboldt Register reported on September 8, 1866: "Water in the Humboldt recedes slowly. The lower end of Humboldt Meadows has been submerged all summer to the detriment of ranchmen who are now harvesting a light crop." In 1884, a dam built across the cut in the Humboldt Dike (the low gravelly ridge which forms a natural dam between the Humboldt and Carson Sinks) was partially responsible for causing the Humboldt River to back up and inundate the hayfields of Lovelock Valley farmers.irate ranchers dynamited the dam.

During extremely dry years Lovelock Valley farmers also suffered from insufficient water flow in the Humboldt. Although this occurred infrequently, it was ruinous when it did. The first record of this occurrence was in 1889 when irrigators upstream from the Big Meadows farms used up the meager supply of water flowing in the Humboldt that year, leaving the Lovelock Valley hayfields to dry up. Lawsuits ensued in an effort to restrict upstream use in drought years, but to no avail (U.S. Bureau of the Centus 1890:186: 1900:847-50; Bard et al. 1981:133).

Other less extensive irrigated areas in Humboldt County were reported in the 1890 U.S. Census as follows:

In Paradise Valley on the Little Humboldt are large ranches irrigating hay crops principally, and there are at least 20 ditches taking water from Martin creek, the principal tributary of the Little Humboldt . . . On the head waters of Quinn River there is some irrigation for the purpose of raising feed for cattle and for small patches of grain and gardens. All the natural supply of this river has long since been appropriated. Besides these localities are several places, as in Pleasant Valley south of Winnemucca, where irrigation is carried on near the foot of the mountains.

By 1900 Humboldt County had 125,000 acres of irrigated land. There were 237 ditches totaling 455 miles in length (U.S. Bureau of the Census 1890:186; 1900:847, 850).

The vast acreages of arid lands stretching as far as the eye could see had tempted dreams of irrigation and reclamation in the District since the beginnings of settlement. Expectations always ran high and consequently results of reclamation were generally disappointing to the participants. One of the earliest attempts at reclamation, and one of the largest fiascos, was the Humboldt Canal scheme. A San Francisco firm, Gianca-Gintz, promoted the canal which was to carry water from the Humboldt River at Prebble 90 miles west to Mill City where it was to power a huge silver mill which was to be built there. The fifteen-foot wide, three-foot deep canal was designed to irrigate all the lands along the 90 mile route between Prebble and Mill City. However, the project was technologically impossible and was discontinued in 1863 near Winnemucca. Although \$1,000 a mile had been allocated, a total of \$100,000 had already been expended on the first 28 miles. Vestiges of the canal are still visible between Mill City and Winnemucca (Goodwin 1966:2-5; Sonoma Sub-basin; Paher 1970:133).

Between 1859 and 1860 several springs in the District were developed by the Landers survey party as part of the federally-funded Honey Lake Wagon Road Project. Big Antelope, Rabbithole, Trego, and Buffalo Springs were developed at this time (Jones 1980:10).

During the late 1880s and throughout the 1890s, Nevada Senators William Stewart and Francis Newlands actively promoted government sponsored irrigation projects in the arid west. Stewart's initial proposal was for the Federal government to turn over all public lands in the arid west to the states. Reclamation projects would then be funded by the proceeds from the sales of these lands. However, this plan of action met with national opposition and the funding strategy had to be altered. In 1902 the Arid Lands Reclamation Act proposed by Congressman Newlands was passed. Under this law, money collected from homesteaders for settlement of the arid lands was to be pooled into a Reclamation Fund. Money from the Reclamation Fund was to be used to build dams, canals, reservoirs and other irrigation projects in the sixteen states of the continental far west (Texas was included at a later date). The law stipulated that users of the reclaimed lands would gradually repay the federal funds expended after the project was completed. The Act also established the Reclamation Service which was to administer federally funded irrigation projects (Hulse 1978:222; Bard et al. 1981:47-48).

During the 1890s there arose a national interest in reclamation of the arid lands of the west. Several factors contributed to the growth of the reclamation movement at that time. National interest was fueled by the official closing of the American frontier in 1890. Americans became eager to free more land within their national boundaries for homesteading and agrarian pursuits. Reclamation was grasped by many as a possible answer to this need. Reclamation was also supported enthusiastically on the local level. The decline of mining during the last two decades of the nineteenth century and hard times in the livestock industry had thrown Nevada's economy into a slump. Channeling water to Nevada's arid lands was viewed as a way of helping to

stabilize and diversify the State's flagging economy. It was hoped that farming would become a major part of the State's economy and that irrigation would make possible the large-scale cultivation of a wide variety of crops (Bard et al. 1981:45-47).

The first project to be initiated under the Arid Lands Act was the Truckee-Carson Project, also known as the Newlands Reclamation Project. Construction on the project, which diverted waters from the Truckee and Carson Rivers into the Carson Sink, began in 1903. Derby Dam was built on the Truckee River and a canal was built which diverted water from the Truckee River into the Carson River to water the lands of the Carson Sink Valley. The Truckee Canal was more than 30 miles long and irrigated the lands in the Carson Sink Valley as well as the fertile bench lands east of Wadsworth where the town of Fernley grew. Several hundred miles of small canals were built in the Carson Sink Valley and land was open to settlers for entry in 1905. Although the project encountered many problems and early expectations proved to be overly optimistic, nearly a thousand farms and small ranches were eventually developed as a result of the Truckee-Carson Project.

The town of Fallon was planned and developed as a part of this project. Alfalfa hay was the major crop in the area, but Fallon also became famous for its melons, cultivation of which began in the 1920s. Sugar beets were raised for a time in both the Carson Sink Valley and the Lovelock Valley for processing in the Nevada Sugar Company plant in Fallon which was completed in 1911. Their promoters believed that sugar beets would flourish in alkaline soils and thus would be an extremely successful crop. However, problems were incurred when leafhopper insects caused extensive crop damage and when market prices were lower than had originally been expected. The factory closed in 1914 to open again briefly in 1917 before it was permanently closed. Although sugar beets did not turn out to be the lucrative product farmers had hoped them to be, they continued to be raised in Pershing County. In 1964, 26,640 tons were reportedly harvested in Pershing County (U.S. Bureau of the Census, Pershing County).

A smaller irrigation project, the Rye Patch Dam, was undertaken in the 1930s in the Lovelock Valley. Initially it had been hoped that the Truckee-Carson Project would provide irrigation water for the Lovelock Valley as well as the Carson Sink and the Lahontan Valley. However, there proved to be insufficient water for this purpose and Lovelock Valley farmers continued to have problems with flooding during particularly wet seasons and insufficient water supplies during extremely dry years when irrigators located farther up the river utilized the majority of the available water before it could reach the Big Meadows area.

In an effort to overcome these problems, Lovelock Valley ranchers and farmers borrowed money from the Federal Government in 1933. They used these funds to purchase the water rights of some upstream ranchers and they began storing water in a reservoir in the northern part of the valley. Federal monies were also utilized in constructing the Rye Patch Dam in 1937. The dam created a 20-mile long reservoir which enabled farmers to store water during wet seasons and to ensure a steady water supply during drought years. Although the dam did not end the valley's problems with flooding, it did help to stabilize and stimulate farming in the Lovelock Valley in succeeding years (Hulse 1978:225-226; Bard et al. 1981:57-58).

Agricultural production in Nevada was stimulated during the second decade of the twentieth century by the increased demand for farm products created by World War I. All irrigable lands were brought into use as well as some submarginal lands. The large demand for domestic sources of sugar also encouraged beekeeping and cultivation of sugar beets. In spite of the peak prices paid for farm products during the war years, profits were reduced by high production costs which resulted largely from labor shortages.

Following the armistice, agricultural produce prices dropped drastically. Farmers generally survived this period of economic depression and went on to prosperous years in the mid-1920s. During the Great Depression of the 1930s agricultural product prices plummeted once again. A drought in 1931 followed by a severe winter in 1932 intensified farmers' problems. A positive effect of the Great Depression was that a number of state and federal agencies were formed to provide aid and counsel to Nevada's agricultural community.

The Nevada Emergency Relief Administration, which later became part of the Federal Civil Works Administration, expended nearly a million dollars to pump water into the Truckee River. Crops in the Fernley area, as well as the Truckee Meadows, were saved as a result. Over two million dollars were also expended to drill wells, install windmills, and develop springs on federally administered lands in Nevada.

Other federal agencies and programs which began to function in Nevada during this period were the Rural Rehabilitation Administration (present Farmers Home Administration), the Agricultural Adjustment Program, and the Soil Conservation Service. Farm credit associations were also formed to aid farmers and ranchers in refinancing their operations (Creel 1964:19-22).

During the 1940s, World War II stimulated agricultural production once again. However, farmers encountered problems similar to those they had experienced during the first World War in maintaining an adequate labor force. Farm hands, as well as members of farmers' families were absorbed by the draft and high-paying industrial and construction jobs. In an effort to overcome the manpower shortage, a national labor force was set up by the U.S. Department of Agriculture. County extension agents who administered this program locally made extensive use of Mexican Nationals in satisfying farm labor needs. It was during this period also, when so many of the men were off at war, that gasoline fueled machinery replaced less efficient horse drawn farm equipment on many of the farms and ranches in this area (Creel 1968:23; Ugalde 1981).

From the end of World War II to the present, many more acres in the District have come under cultivation as the result of deep well drilling, the availability of electricity to operate pumping devices, and the use of fertilizers to enrich the soil. Sophisticated automated sprinkling systems have come into use in recent years, but the original irrigation systems of banked ditches and headgates across fields excavated by pioneer farmers are still used on many farms and ranches (Marshall 1980:21; Creel 1964:23-24).

The following summary of irrigated acres shows that irrigated acreage has nearly doubled since World War II (U.S. Census of Agriculture 1950:176; 1978:1):

	HUMBOLDT	PERSHING	TOTAL
1944	67,950	27,997	95,947
1978	146,906	40,286	187,192

Alfalfa has remained the principal crop cultivated in the District throughout the twentieth century with both hay and seed being produced primarily for local use and sale. Other crops and farm products continue to be raised on farms and ranches mainly for subsistence purposes. An exception to this rule is potato growing. Fair numbers of potatoes have always been raised in the District, but it was not until the early 1970s that large-scale production of this root crop began in Humboldt County. Packing and processing plants were also built in the Winnemucca vicinity at that time. Low market prices and rapidly descending water tables have darkened the prospects of success for this industry, however.

Lack of water has been the major obstacle to agricultural growth in the District since the first furrow was plowed here. Even in these days of sophisticated water technology, obtaining sufficient water remains a serious problem for farming endeavors. The high price of electricity required to power water pumps limit the amount of land which can be developed agriculturally. Increasing energy costs threaten the economic feasibility of existing agricultural operations as well (USDI, BLM 1981a:2-30; USDI, BLM 1981b:3-64; Jones and Loomis 1979:46).

Also, most of the water basins in the District which have supported agriculture in the past and/or present have been classified as "designated basins" by the State Engineer Division of Water Resources. Classification as "designated" signifies that the amount of natural groundwater recharge to a basin either equals or is surpassed by the amount being extracted. Although permits to drill wells for irrigation can still be obtained in most basins depending on the State Engineer's assessment of the ground water situation, in some basins no permits for irrigation are being issued (Angle 1982).

However, new sources of energy, technological advances, and needs for agricultural products continue to emerge and may ease current problems as they have in the past. Already a pilot project utilizing excess potatoes for the production of gasahol has been proposed for Humboldt County and geothermal steam is being utilized in an onion dehydration plant at Brady Hot Springs. Developments such as these may enable farmers to meet the challenges of the arid lands in the District and the economic fluctuations of the nation as they have for over 140 years.

Physical traces of farming, irrigation and reclamation include farms, farm equipment, irrigation ditches and systems, dams and reservoirs, wells, water pipelines and spring developments. Possible research projects include studies of changing methods of hay production and irrigation as well as farm technology. Historic photos in private and public collections, publications and water district records are useful sources of documentation.

TABLE 4
HAY PRODUCTION
Tons Harvested 1870-1978

YEAR & COUNTY	ALL HAY	ALFALFA	WILD HAY	SMALL GRAINS CUT FOR HAY	CLOVER & TIMOTHY	OTHER HAY	ALFALFA SALES	ALL HAY SALES
1870 Humboldt	2,219							
1890 Humboldt	23,208							
1900 Humboldt	103,434	57,988	43,842	1,517		87		
1910 Humboldt	127,146	76,387	43,373	2,511	2,600	2,275		
1920 Humboldt Pershing Total	49,398 58,309 107,707	12,160 55,989 68,149	35,197 983 36,180	479 767 1,246	302 - 302	1,260 569 1,829		
1930 Humboldt Pershing Total	36,180 17,933 54,113	14,972 16,782 31,754	15,666 739 16,405	232 52 284	30 60 90	5,280 300 5,580		
1939 Humboldt Pershing Total	76,237 38,939 115,176	14,016 35,361 49,377	51,418 1,057 52,475	100 1,561 1,661	- - -	231 - 231		

(TABLE 4 continued)

1944	Humboldt Pershing TOTAL	61,147 35,671 96,818	10,863 33,061 43,924	49,609 2,606 52,215	170 4 174	2,682 779 3,461	455 - 455	
1949	Humboldt Pershing TOTAL	45,781 36,603 82,384	9,408 33,183 42,591	30,835 1,242 32,077	1,000 1,389 2,389	210 50 260	1,856 10 1,866	1,149 25,322 26,471
1954	Humboldt Pershing TOTAL	25,500 50,142 75,642	13,174 49,211 62,385	11,806 400 12,206	307 481 788	50 - 50	3 - 3	645 33,069 33,714
1959	Humboldt Pershing TOTAL	30,954 52,130 83,084	18,555 48,674 67,229	7,239 1,802 9,041	563 1,014 1,577	3,771 70 3,841	826 570 1,396	1,653 27,344 28,997
1964	Humboldt Pershing TOTAL	102,433 58,178 160,611	60,101 52,121 112,222	38,951 1,280 40,231	826 4,445 5,271	2,466 47 2,513	89 285 374	7,490 26,830 34,320
1978	Humboldt Pershing TOTAL	161,469 59,136 220,605	132,112 57,441 189,553	26,038 900 26,938			1,005 - 1,005	

SOURCE: U.S. Bureau of the Census 1870-1978

ADDITIONAL READING

Berk 1979
Christison 1979
Fife 1948
Forbes-Lindsay 1908

Glass 1964
Hardmann 1949
Smythe 1905
Snyder n.d.

Townley 1976
Wittwer 1958

Cattle Industry

The first cattle brought into the Winnemucca District were probably those which accompanied the emigrants along the California and Applegate-Lassen trails during the 1840s. Those animals which survived the rigors of the trail often formed the basis for a herd of beef or dairy cattle in Oregon or California. In addition, bovines furnished one of the few sources of fresh victuals during the arduous journey. Milch cows yielded fresh milk and beef cattle provided an occasional welcome change from the customary fare of briny bacon. Many emigrants also toted along a small butter churn, allowing the luxury of fresh butter (Egganhoffer 1961:104). Virgil Pringle, traveling to Salem, Oregon, via the Applegate Trail in 1846, reported, "Find cows a great help to our living" (Pringle 1846:2). Kimble Webster, traversing the Applegate-Lassen Trail in 1849, recorded in his journal that he and his companions had slaughtered a "beef animal" and cooked it in the scalding water of Double Hot Springs (Webster 1917:86). Alonzo Delano passing along the same trail in 1849 described the gastronomic pleasure fresh meat provided his party and himself:

Our bacon, flour, meal, sugar, and vinegar were all gone, and we had to take felon's fare - hard bread and water. . . . Mr. Watson had an old cow that the crows had been quarreling over for a long time; and thinking a little fresh beef. . . might be acceptable, he slaughtered her. There could not be more rejoicing around the carcas of a camel by the Arabs on the desert, than we evinced around the poor, worn out, 'knocked down' brute, . . . and we looked upon it as a God-send and like to have surfeited ourselves (Delano 1936:87).

By far the most numerous type of cattle which traveled the emigrant routes were the oxen which pulled the heavy wagons. Although horses and mules also performed this task, oxen were the preferred draft animals for transcontinental travel. Oxen generally covered only twelve to fifteen miles a day but even at this plodding pace they were usually able to outdistance their equine counterparts during the progress of the grueling journey (Egganhoffer 1961:104). Nick Egganhoffer summarizes the advantages of oxen as follows:

. . . they were slower but steadier and more reliable; they could subsist well enough on nothing but grass; (and) were less apt to stray than horses and mules. . . . They needed no expensive harness, a yoke could, if necessary, be improvised with simple tools. Six or eight oxen were used on a two-to-four horse wagon, and they would definitely be needed: the going would be tough before long. . . . In the tough spots, in mud, and the shifting river sands, the big cloven hoofs of the bovines took hold where the mules' smaller ones didn't (Egganhoffer 1961:102, 109).

Initially some time and effort had to be expended in training the oxen to harness. One method reportedly utilized in breaking them in was to attach the yokes to a pair of oxen, tie their tails together, and then allow them to run and buck across the prairie until common sense overtook them (Eggan-hoffer 1961:109).

Extra oxen and other livestock were often driven between two columns of wagons and tended by the young boys of the party. In a difficult situation, such as descent of the Fly Canyon Wagon Slide on the Applegate-Lassen Trail, an extra team of oxen might be attached to a wagon to slow its momentum and prevent it from toppling end over end. Occasionally, in a pinch, a milk cow might also be pressed into service to pull a wagon (Egganhoffer 1961:105, 109; Jones 1980:34-41, 46-48).

Hardy as the oxen were, many of them, as well as other cattle, succumbed to the harsh conditions they encountered along the trail. Hundreds perished from thirst in the scorching midsummer heat of the Black Rock Desert. Many of them collapsed along the portion of the Applegate-Lassen Trail between present day Cholona Crossing and Black Rock. Others were enticed by mirages to leave the trail and wandered off to their deaths. Some met their deaths in hot springs when they attempted to drink from them or when they stumbled into them. Others were stolen by Indians and slaughtered for their meat (Jones 1980:34-41, 46-48).

A substantial number of oxen were present in the Winnemucca District even after the era of large-scale westward immigration had passed. During the early years of settlement they were utilized extensively as draft animals by farmers and miners. Eventually, however, horses (and to a lesser degree mules and asses) completely replaced oxen as the work animals of the land. Census data for 1870 indicate the presence of equal numbers (365 of each) of working oxen and horses in Humboldt County that year. Mules and asses existed in far fewer numbers (78). Uses of oxen apparently diminished rapidly in the succeeding two decades with only 25 working oxen being reported in 1880 and a mere seven recorded in 1890. Oxen had disappeared completely from the census rolls by 1900 (U.S. Bureau of the Census 1870-1900, Humboldt County). Horse numbers, meanwhile, had swelled into the thousands and mules and asses experienced mild growth in population numbers as well (see "Horses, Mules and Burros").

There are a few physical remnants of the plodding beasts of burden which transported many a pioneer and his belongings along the banks of the Humboldt River and through the Hades of the Black Rock Desert to pursue dreams of wealth and happiness in Oregon and California. There is an occasional wooden yoke suspended from the wall of an old barn and the distinctive two piece iron shoe, made to fit the cloven hoof of the ox, is still found occasionally along one of the old emigrant routes. The emigrant routes themselves were beaten out by the pounding of the oxen hooves, traces of which can be seen to this day. Along the Applegate-Lassen Trail in the vicinity of the Quinn River more tangible evidence of the oxen exists. Several concentrations of skeletal remains are probably the bones of oxen which perished there during trail days (see "Emigration").

The production of cattle for human consumption began on a small scale on the trading posts which were established along the emigrant routes during the 1850s. Trading post proprietors raised a limited number of cattle for sale to passing emigrants as well as for their own use. At these outposts in the western wilderness emigrants were also able to exchange their trail weary animals for fresh ones which had been traded in by earlier travelers. More extensive use of the District's grazing land was stimulated by droughts in California and mining booms in the area during the early 1860s. The winter of 1862-63 was an extremely dry one in California. Desperately in need of forage for their herds, cattlemen with livestock holdings in the central valley and the eastern portion of the state drove their herds into western Nevada. The Humboldt River valley and other basins in the District proved to have ample supplies of feed, with pasture grasses and large stands of ryegrass available in many areas. Recognizing the suitability of the land for livestock grazing and the growing demand for fresh beef created by the burgeoning local mining industry, some California cattlemen decided to establish permanent operations in Nevada while others began a practice of wintering their stock in this state. The vast expanses of open range which were virtually free for the taking also figured heavily in the desirability of the area for resident and nomadic cattle operations. Since winter feeding was not practiced during the industry's infancy in this area, operational costs were minimal and substantial profits could be realized (Creel 1964:1, 2, 8; Hazeltine 1960:13; Hulse 1978:158; Bowers and Muessig 1982:79).

The hot climate of areas such as the San Joaquin Valley which was more conducive to cattle diseases than the generally cooler Nevada climate also persuaded cattlemen such as Miller and Lux to set up operations in Nevada (Treadwell 1931:97).

The completion of the Central Pacific Railroad in 1869 made shipping cattle to out-of-state markets, feedlots, and ranges possible. This development stimulated growth of the industry within trailing distance of shipping stations such as Winnemucca and Battle Mountain. During the mid-1860s the existing herds had been augmented by thousands of longhorns trailed into Nevada from Texas. Growth of the industry during the 1870s was rapid in the Winnemucca District. Census figures for Humboldt County indicate an increase from 1,400 cattle in 1870 to 11,000 in 1880 (Creel 1964:9; Hulse 1978:158; Hazeltine 1960:10; U.S. Bureau of the Census 1870-1880, Humboldt County).

Although Nevada mines declined in the late 1870s, the cattle industry was not adversely affected due to the availability of outside markets. By the mid-1870s more than 50% of San Francisco's beef was supplied by Nevada and by 1880 beef was being shipped east to Omaha as well. Indirectly, the decline of the mines was actually beneficial to Nevada cattlemen. When small farmers who were dependent on the mines for sale of their products went out of business, large scale operators bought up their property and water rights (Hulse 1978:158, 164-165; Creel 1964:9).

During the 1880s Nevada cattlemen began to realize the value of upgrading the quality of their stock for the purpose of obtaining better yields. The Texas longhorns of the mining boom years began to be replaced by purebred Herefords and Shorthorns which matured more quickly and enabled their owners to net larger profits. Herefords and Shorthorns have remained the prevailing breeds until the present (Creel 1964:9).

The "white winter" of 1889-90 resulted in significant changes in the local livestock industry. The summers of 1888 and 1889 had been extremely dry ones making forage supplies scarce. The winter of 1889 was one of the most severe in Nevada's history. From December through January the snowfall was constant and the temperatures were subzero for days on end. The depth of the snow varied in different parts of the District; Spring City reportedly having seven to eight feet of "solid packed" snow while Lovelock and Rye Patch had relatively light snowfall. In most parts of the District, the snow was about two feet deep--deep enough to make grazing nearly impossible for many herds of livestock. The losses varied, partially according to the area and partially according to the efforts of the individual operators. Some industrious operators were able to save their herds and keep their losses to a minimum by braving the arctic cold and taking feed to the animals. Others fared less well and lost up to 75% of their herds. Census statistics indicate that at least 46% (48,694) of all cattle in Humboldt County perished in 1889. In addition, 15,064 cattle were sold or slaughtered. Newspaper reports indicate that livestock were offered for sale at drastically reduced rates as well as being slaughtered prematurely before starvation or the freezing temperatures could claim the animals (Silver State, January 9, 14, 15, 17, 1890; U.S. Bureau of the Census 1890, Humboldt County).

An editorial in the local newspaper in January 1890 laid much of the blame for the severe losses suffered by the livestock industry on local ranching practices:

A Lesson for the Stockman

The present Winter is the most severe on stock ever experienced in Nevada. Though the snow is perhaps as deep as it has been at any time since settlement of the country by whites, the loss of stock is not wholly attributable to that cause, but to the dry seasons of 1888 and 1889. In 1868 the Winter was as severe as the present one and the snow nearly if not fully as deep, yet cattle wintered well and emerged from the valleys fat enough for beef. Then the plains in many places were covered with white sage and ryegrass, which afforded excellent winterfeed for stock. Now there is nothing of that kind in this section of the State for the reason that cattle and sheep not only eat up all the ryegrass and white sage in the Summer and Fall, but also much of the browse on which they usually Winter, and many of them must necessarily perish.

This Winter teaches stockmen a lesson which they should always remember. It shows the folly from a business standpoint of letting cattle run at large in the snow when the range is pastured bare and trusting luck to take them through. In no

other country is such shiftlessness exhibited. Everywhere else provision is made for feeding stock if there is nothing on the range for them to eat, and the present Winter demonstrates the necessity of making similar provision in Nevada (Silver State Janauary 18, 1890).

As was recommended in the above editorial, cattlemen recognized the folly of year-round grazing practices after this disastrous winter. Thenceforward the growing and harvesting of winter feed developed into a major agricultural activity in this area (see "Farming").

The proliferation of winter feeding practices and continued efforts toward upgrading stock combined to cause cattle production in Humboldt County to soar to an all time high of over 93,000 (non-dairy cattle) by 1900 (U.S. Bureau of the Census 1900, Humboldt County). Although the industry as a whole prospered during the 1890s, many small operators went out of business. Some were economically devastated by their losses in the winter of 1889-90. Others were unable to cope with the financial burdens imposed by the revolutions in the industry. The cost of purchasing hay for winter feed or of acquiring the land and water necessary to cultivate hay proved too great for some small ranchers and they sold out to larger livestock operations (Hulse 1978:160).

By 1910 total non-dairy cattle reported for Humboldt County had dropped to 51,310, a reduction of 42,344 animals (45%). This decline in cattle production may have been partially due to range depletion caused by the extremely high numbers of cattle, sheep, and horses utilizing the rangelands in the District at the turn of the century. Also, sheep were apparently replacing cattle in some instances. During this first decade of the twentieth century, while cattle numbers were decreasing, sheep numbers increased in Humboldt County by 68,561 animals (28%). Since unlike cattlemen, sheepmen were able to successfully graze their herds year-round on the public ranges, operational costs were considerably lower and the profit margin was larger (U.S. Bureau of the Census 1900-1910, Humboldt County).

World War I revived cattle production in the District. Increased demand, as well as a large fund appropriated by Congress to stimulate food production, enabled cattlemen to obtain peak prices for their beef. Beef production in the District continued to rise during post-war years despite a drop in agricultural production prices. In 1925, 80,599 cattle were reported for Humboldt and Pershing Counties. After the stock market crash of 1929, beef prices plummeted. During the succeeding depression years many operations went bankrupt. Low freight rates for shipping livestock and feed helped soften the blow for some ranchers. By 1930, census records indicate cattle numbers in Pershing and Humboldt Counties had dropped to 42,832, a 47% reduction from 1925 (Creel 1964:18-21; U.S. Bureau of the Census 1925-1930, Humboldt and Pershing Counties).

The passage of the Taylor Grazing Act of 1934 organized the public lands into grazing districts and required the ownership of base property for winter pasturage commensurate with the public lands utilized for summer pasturage. Cattlemen were in a much better position than sheepmen to satisfy the requirements of the law. Because cattlemen practiced winter feeding, they generally

were in possession of substantial amounts of base property while sheepmen with year-round grazing operations often owned little or no land. These circumstances were influential in causing sheep numbers to dwindle in the succeeding decade while cattle numbers increased. Sheep still outnumbered cattle in Humboldt and Pershing counties in 1940 but by 1945 they had yielded to cattle the position of supremacy they had held in the livestock industry in this area since 1880 (Sawyer 1971:115, 153; Harkenrider 1979; U.S. Bureau of the Census 1940-1950, Humboldt and Pershing Counties).

As a main shipping point, Winnemucca was the destination of many trail drives in the late nineteenth and early twentieth centuries. The herds of cattle barons Peter French and Henry Miller, as well as those of many others, were driven to Winnemucca to be shipped west by rail. The journey from French's "P" Ranch in Oregon took about three weeks and usually occurred in late fall or early winter. In addition to his own herd, French would drive to market the herds of smaller ranchers who could not profitably make the drives themselves. French would either buy these cattle or take them on a consignment basis. The trail from Oregon passed through Denio to Winnemucca. In Winnemucca, the cattle were taken to the stockyards and sold to a buyer.

There were three stockyards in Winnemucca. One was located on the site of the present Bevard and Lambert Construction Co. (on 4th Street near the present BLM Office). This one had a slaughter house associated with it. A second was located along the tracks of the Western Pacific Railroad in the vicinity of the present French's potato processing plant. The third was built along the Southern Pacific tracks about ½ mile from the "round house." The last two stockyards were built by Miller and Lux (Horton 1981).

Winnemucca was the site of much celebration when the drive was completed. Giles French describes the Winnemucca of trail days:

In Winnemucca - which looked like a city compared to the P Ranch - the saddle-weary riders found more than a market for their stock. They encountered the pleasures of their daydreams. . . . there were round tables covered with green baize across which poker chips moved to the man with the most skill and the best luck. There were men with big mustaches and gaudy armbands who dispensed liquors which made a man feel big as a bull in a few minutes and remorseful and contrite in a few hours. There were doors decorated with red lights where professional women waited.

It was all excitement, different from the daily routine; a time to laugh and be gay, a fiesta. . . . The womanless P Ranch had no sights like bustling waitresses, no conviviality like a party of friends around a bar (French 1964).

Miller and Lux cattle were also driven to the railhead in Winnemucca from the company's ranches in Oregon. Pete Pedroli, local resident and one time Miller and Lux cowboy, recalls that the drive from Burns, Oregon, to Winnemucca took "30 days and 30 nights" with the size of the herd varying from between 200 to 2,500 head. The crew on a drive consisted of about 10 buckaroos, a cook and a wrangler. Thirty to fifty carloads were usually sent to California many of them unloaded into the stockyards at the company's main ranch in San Joaquin (Pedroli 1981; Freeman 1980).

According to Treadwell (1931), the cattle were shipped from Winnemucca to various locations in California. The "fat" cattle were sent to San Francisco to be marketed, the "feeders" were shipped to feed yards in Los Banos, Gilroy and other places, and the "stock" cattle were delivered to the ranges.

One of the hazards of the drive was the stampede. Pete Pedroli recalls one evening in Winnemucca in about 1915 when approximately 2,500 head of cattle were driven into town:

See them steers was wild. . . . When they got into the field down here - it was just about 5 o'clock. The railroad whistle blew and the cattle stampeded. Some of 'em went in between the cars, hit the train, killed themselves. Some got ran over. Five hundred head drowned in the Humboldt River right below town. A lot of 'em got away. Eight or nine years later they'd keep bringing a few of them old steers. Them steers was wild.

Eventually, the trail drives faded away as the development of motorized vehicles made trucking the steers to their destinations a more feasible alternative. Pedroli estimates that the trail drives in this area ended in the 1940s (Pedroli 1981).

Rustling has been a chronic problem for the livestock industry for as long as domestic animals have been in the District. The first rustling was done by the local Indians who often drove off a straggling animal from a passing wagon train to butcher for food. During the 1860s and 70s mounted bands of Indians frequently raided the local ranches, pilfering prime beef and quality horses. The presence of the military in this area eventually subdued this activity. However, archeological excavations in the High Rock Country indicate that as late as 1918 rustling was practiced as a means of subsistence by isolated Indian bands in this area.

Caucasian rustlers also plagued the local ranchers. Some rustling actually was undertaken by other ranchers, unbranded calves and cattle being a prime target. According to long-time resident Pete Pedroli, Henry Miller always figured that he would lose several hundred head of cattle to other ranchers and rustlers each year. When the railroads came through rustling increased as railroad crews supplemented their food with stolen livestock.

One of the more notable local rustlers was a woman named Susie Raper. This native born Australian and her husband settled in Paradise Valley in 1865. Crippled by an Indian attack in 1866, Mr. Raper eventually deserted his wife, leaving her to support three sons. Susie Raper wanted to get into the cattle business but having no money to invest, she turned to cattle rustling instead. Teaming up with a male partner, she commenced rounding up strays and changing brands. Eventually, she established her headquarters at Carlin, and reportedly built up one of the finest herds in the state. However, she was caught red-handed three times in the process and brought to trial in Elko and Lander counties. The first two times the jurors found themselves unable to convict a woman and she was set free. The third time she beguiled an Elko deputy into releasing her. After this last instance of incarceration, Ms. Raper decided to move her rustling activities into Colorado. Finding her occupation more difficult to pursue in that state, she tried running a stage line for a while,

then moved on to Socorro, New Mexico. Last heard from she was on trial again, but this time it was for murdering the rancher she had been living with there. Whether or not she was able to charm her way out of the hangman's noose is unknown (Earl 1981a).

Ranchers in modern times continue to experience losses due to rustlers though the culprits are more likely to be irresponsible hunters or recreationists. Neighboring ranchers are also occasionally accused of this activity.

The many hooves which pounded their way to Winnemucca along the routes of cattle drives have left no physical trace on the District. The only major source of information concerning the cattle drives lies in the memories of aging buckaroos and other long-time local residents. However, even this record will have vanished before long if efforts are not made to document the recollections of these individuals.

The resident cattlemen have left a more tangible record of their existence within the District. There are ranches which have been abandoned due to economic hardship or consolidation. Some of these, such as the Forks Ranch in Paradise Valley, are used occasionally as line camps but stand empty most of the year. Abandoned line camps and range facilities also are found within the District. In addition, many of the ranch buildings, line cabins, fences, windmills, and irrigation ditches constructed by the pioneer cattlemen are still being used today by ranchers who are in some cases descendents of the original homesteaders. (see "Settlement-Architecture, Line Camps").

TABLE 5
HISTORICAL BEEF PRODUCTION

YEAR AND COUNTY	ALL CATTLE	BEEF CATTLE	DAIRY CATTLE	OXEN
1870				
Humboldt	1,846	1,403	78	365
1880				
Humboldt	13,785	11,016	2,744	25
1890				
Humboldt	41,929	41,244	678	7
1900				
Humboldt	94,929	93,654	1,275	
1910				
Humboldt	52,801	51,310	1,491	
1920				
Humboldt ¹	47,243	46,647	596	
Pershing ¹	13,086	12,152	934	
TOTAL	60,329	58,799	1,430	

1925			
Humboldt	62,383	62,093	290 ²
Pershing	18,216	17,572	644 ²
TOTAL	80,599	79,655	934 ²
1930			
Humboldt	36,760	36,248	512 ²
Pershing	6,082	5,551	531 ²
TOTAL	42,842	41,799	1,043 ²
1935			
Humboldt	40,507		
Pershing	7,356		
TOTAL	47,863		
1940			
Humboldt	44,824 ³	44,376 ³	448
Pershing	7,175 ³	6,755 ³	420
TOTAL	51,999 ³	51,131 ³	868
1945			
Humboldt	58,215		
Pershing	13,445		
TOTAL	71,660		
1950			
Humboldt	58,215	57,882	333
Pershing	12,097	11,915	182
TOTAL	70,312	69,797	515
1959			
Humboldt	72,121	71,842	279
Pershing	38,299	38,147	152
TOTAL	110,420	109,989	431
1964			
Humboldt	89,443	89,217	226
Pershing	32,709	32,653	56
TOTAL	122,152	121,870	282
1974			
Humboldt	73,296	73,223	73
Pershing	32,607	32,578	29
TOTAL	105,903	105,801	102
1978			
Humboldt	62,263	62,169	94
Pershing	21,250	21,233	17
TOTAL	83,513	83,402	111

1 Pershing County was organized from part of Humboldt County in 1919.

2 Dairy cattle 2 years and over.

3 Cattle over 3 months.

SOURCE: U.S. Department of Commerce, Bureau of Census. U.S. Bureau of the Census, "Agriculture" 1870 to 1978. Government Printing Office, Washington, D.C.

ADDITIONAL READING

Adams 1959	Dale 1960	State Board of Ag. 1885
Adams 1916	Dana 1956	Nevada State Cattle Assn. 1949
Barnes 1913	Frink 1956	Norcross 1914
Brennen 1935	Huffaker 1883	Pelzer 1936
Brown 1956	Land 1888	Nevada Historical Society n.d.
Carpenter 1941	McNeeley 1898	Short 1965
Clawson 1950	Nevada Agricultural Experiment Sta- tion 1946	Venstrom 1944

Sheep Industry

The ability of sheep to subsist on incredibly small amounts of water made them particularly adaptable to desert travel, and emigrant wagons frequently carried a ram and a few ewes over the trail as the basis for a flock in California. In fact, John Bidwell, leader of the first emigrant train along the Humboldt is reported to have carried sheep with him in 1841. Bidwell eventually became the sheep king of Chico County (Sawyer 1971:xiii, 1-13).

The discovery of gold in California and the ensuing gold rush of 1849 caused the price of sheep to escalate from 75 cents to 12 to 15 dollars a head. The enormously increased demand and the inflated price of sheep stimulated the importation of large numbers into California, many of these being trailed through the Winnemeucca District (Georgetta 1972:7). An added incentive to prospective trailers was the fact that the sheep could be trailed hundreds of miles grazing on public lands all the way. Two or three year old wethers (castrated male sheep) were the animals most in demand by the trailers. The wethers were stronger and could withstand the long drive better than ewes as well as bringing a higher price as mutton in California (Georgetta 1972:35).

The first sheep drive which passed through the area was probably the Wooton Drive of 1852. Wooton trailed 9,000 sheep from Taos, New Mexico to Sacramento, California, passing through Colorado and Utah to Nevada. Documentation for this drive is somewhat vague, but it strongly indicates that Wooton trailed his sheep along the Humboldt River through Nevada. In California Wooton was able to realize a \$50,000 profit for sale of his flock (Georgetta 1972:8-15). Spurred on by the success of his acquaintance's venture, Kit Carson initiated another sheep drive from New Mexico in 1853. He passed through Colorado and Wyoming to Elko and traveled along the Humboldt River through Nevada. Records indicate that he sold 13,000 sheep in San Francisco. As had Wooton, Carson reaped a substantial return on his investment (Georgetta 1972:17-20).

The financial success of the Carson and Wooton drives stimulated other entrepreneurs to attempt to drive huge flocks of sheep to the hungry markets of the California mining camps. Although the profit margin narrowed as the supply increased, the California-bound trail drives continued to be fairly

lucrative enterprises through the early 1860s for those who were able to minimize their death loss rate and the duration of the drives. These early sheep drives, as a rule, originated from either New Mexico or the mid-western states. The New Mexican sheep drives generally experienced much higher success rates than those from the midwest. The Merrino and Churro breeds from the southwest had been raised on the range and so were used to the coarse dry feed of the desert. They also had a strong flocking instinct which facilitated herd control throughout the drive. The sheep from the midwest, on the other hand, generally had been pasture- or barn-raised. They were accustomed to hay, oil cake, and lush green grass and had difficulty adapting to the desert vegetation. These midwestern sheep tended to stray as well, inhibiting the progress of the drives (Georgetta 1972:202).

During the eight-year period between 1852 and 1860 more than a half million sheep crossed through Nevada enroute to California, many of them passing through the Winnemucca District. By 1865, however, vast herds of sheep were being raised in California and Oregon and sheep had become cheap in these states. The direction of the sheep drives shifted from west to east as trailers began buying sheep in California and Oregon to ship to eastern markets (Georgetta 1972:26, 161).

Between 1865 and 1900 thousands of sheep were trailed from California through Nevada to Wyoming, Nebraska, and Montana. Estimates for the number of sheep which passed through Nevada during this period run as high as two to three million head. There was a northern as well as a southern route through Nevada. The northern trail, which was the most important of the two, passed through the Winnemucca District. Commencing in Red Bluff, California, it went eastward passing through the Quinn River and Paradise Valleys (Hazeltine 1960:22). It may be difficult to follow these trails today since they were often 25 to 100 miles wide. Several drives were usually made along the same route each year and since the sheep had to graze along the way, they could not follow in the tracks of the preceding drive (Georgetta 1972:54).

Although transcontinental rail transportation was available as of 1869, sheep drives continued to traverse Nevada, actually increasing in number after completion of the Central Pacific and Union Pacific Railroads. After 1890 the trail drives decreased rapidly due in large part to the settlement of the country over which they passed. Squatters and homesteaders had fenced many of the waterholes, meadows and valleys. Sheep taxes, decontamination laws and the hostility of cattlemen also contributed to the demise of the great drives and they finally came to an end about 1910 (Georgetta 1972:57-65).

During the period the great sheep drives were passing through the Winnemucca District sheep ranching was also developing there. From a mere 700 sheep reported in 1870, sheep numbers had expanded to an all-time high of 242,500 by 1910 (U.S. Bureau of the Census 1870-1910, Humboldt County). First major use of the District rangelands for sheep grazing, other than that which occurred during the trail drives, probably was during the winter of 1862-63 when lack of feed in California due to drought caused many sheepmen to drive their flocks into Nevada to graze. In this way the potential of the area for raising sheep was realized (Angel 1881:132).

The availability of high mountain pasturage with adjacent low desert summer range plus the vast amount of public rangeland made this area ideal for transhumant sheep outfits (Douglass and Bilbao 1975:302). During the 1860s most

of the sheep raised in Nevada were wethers which came from California, Oregon, and Utah for fattening. These were sold as three- and four-year olds to mining communities in Nevada and California (Hazeltine 1960:17).

During the 1870s the sheep industry began to grow dramatically in this area, another severe drought in California in the early part of the decade bringing in large-scale nomadic operations. The completion of the Central Pacific and Union Pacific Railroads provided additional impetus to the industry by opening up new markets. Winnemucca and Battle Mountain developed into major shipping stations. Wethers were transported from these points to stockyards in the midwest where they were sold to feedlot companies and packing houses. During the 1870s many sheep were brought into Humboldt County for summer grazing from the Sacramento and San Joaquin Valleys of California as well as from southern Oregon. Year-round operations also started up in this area. Between 1870 and 1880 Census records indicate an increase of 27,700 sheep in Humboldt County (U.S. Bureau of the Census 1870-80, Humboldt County).

The Quinn River area was the first area to be heavily utilized, with sheep operations starting up in 1871. By 1880 the Quinn River area supported two of the largest flocks in the State. The country around Kings River and Paradise Valley also developed into major sheep grazing areas. Intensive use of the range lands by sheep as well as other livestock resulted in heavy damage to the forage, particularly in the Santa Rosa Range. The creation of National Forests in 1906-1909 in the Ruby and Independence Mountains forced sheepherders out of these areas and resulted in even heavier use of the Santa Rosas (and other areas in Humboldt County). The increased destruction of the forage and competition for the summer range between the nomadic sheepherders and local ranchers were alleviated by the creation of the Humboldt National Forest in 1911 which eliminated transient sheep grazing in that area (Sawyer 1971:15-17; Goodwin 1966:5-6, Little Humboldt Sub-basin Section). Increased numbers of sheep in Humboldt County during the first decade of the twentieth century and decreased numbers during the second decade are reflected in the census records for these periods (U.S. Bureau of the Census 1900-1920, Humboldt and Pershing Counties).

World War I stimulated production in the sheep industry and the post-war years continued to be prosperous ones for sheepmen. Throughout this period, Nevada banks loaned vast sums of money to sheepmen who had few problems repaying their debts.

The successful years of the later part of the nineteenth century and the early twentieth century ended with the stock market crash of 1929 for many operators. The stock market crash caused sheep and wool prices to drop dramatically. Between 1930 and 1932 the prices of both commodities continued to decline. The problems of the sheep operators were compounded in 1932 by a drought which caused waterholes and hayfields to dry up. During the exceedingly cold winter of 1932 thousands of sheep died, leaving many sheepmen in serious financial trouble. They could not pay off their loans and they were in need of additional financial assistance. Rather than foreclose on the sheep ranchers, Wingfield, owner of many of Nevada's banks, continued to loan money to them throughout these years, optimistic that economic conditions would improve and that he would eventually get a return on his investment. However, this did not occur soon enough and the Wingfield banks were

closed by the State Bank Examiner with Wingfield declaring bankruptcy at the end of 1932. Following this occurrence, many sheepmen's loans were foreclosed and they lost both their sheep and their lands. The First National Bank of Winnemucca belonged to the Wingfield chain (Georgetta 1972:376-377, 384, 403-422).

The passage of the Taylor Grazing Act in 1934 was a fatal blow to many of the remaining sheep operations. Previous to the enactment of this law, many shepherds and their flocks roamed freely over Nevada's millions of acres of public domain, grazing year-round on public land. Afterwards public lands were organized into grazing districts and their use depended upon ownership of base property commensurate with public acreage required for summer pasture. As few sheepmen owned much rangeland, the law caused many of the sheep operations in the area to go out of business (Sawyer 1971:115, 153; Harkenrider 1979).

Physical evidence of the sheep industry includes line camps (often equipped with bread baking ovens), Basque aspen carvings, and, possibly, monuments in the Gerlach area which may have been erected as territorial markers by sheepmen. Historic photos of sheep drives and sheep operations are useful sources of documentation. There are some in public collections and published literature, as well as many in private collections.

Winnemucca District shepherds have belonged to a variety of nationalities. When Wooton trailed his sheep through the area in 1852, his herders were fourteen Mexicans (Georgetta 1972:20). Other early herders were Scottish, Irish, Portuguese or French. In general, these men had lengthy, if not lifelong, experience in working with sheep. The Chinese herders of Thomas Nelson, a Humboldt County operator who ran sheep in the vicinity of Stone House, were an exception to this rule. In 1869, after the completion of the Central Pacific Railroad, many Chinese were left unemployed. Nelson was desperately in need of herders and so decided to hire two Chinese on a trial basis. They proved to be so efficient that by the time he sold his herd in 1895 all of his shepherds were Chinese. During the 1880s and 1890s Basques began to become the dominant nationality among shepherds (see "Contemporary Cultures"). It became the practice of some operators, such as John G. Taylor, to pay the passage of a prospective Basque employee with the understanding that the man would work for the operator at least until his passage was paid for (Georgetta 1972:56 and 370; Hazeltine 1960:20).

Herders working for present day sheep operations continue to be predominantly Basques but also include Mexicans and Peruvians (USDI, BLM, 1981b:2-12 and 2-40).

TABLE 6
HISTORICAL SHEEP PRODUCTION

Year	Humboldt Number	Pershing* Number	Total
1870	700	-	700
1880-exclusive of spring lambs	28,400	-	28,400

1890	69,001	-	69,001
Died in 1889 due to disease	29,700	-	
1900	173,882	-	173,882
1910	242,463	-	242,463
1920	77,922	40,051	117,973
1930 (over 6 mo.)	111,941	63,791	175,732
1935	125,050	40,983	166,033
1940 (over 6 mo.)	72,552	4,341	76,893
1945	40,644	6,439	47,083
1950	14,349	4,943	19,292
1954	11,986	7,193	19,179
1959	16,577	3,391	19,968
1964	9,136	6,471	15,607
1974	1,848	5,660	7,508
1978	5,887	13,625	19,512

* Pershing County was organized from part of Humboldt County in 1919.

SOURCE: U.S. Department of Commerce, Bureau of Census. Census of the United States, "Agriculture" 1870 to 1978. Government Printing Office, Washington, D.C.

TABLE 7
HISTORICAL WOOL PRODUCTION

Year	Humboldt Pounds	Pershing* Pounds	Total Pounds
1870	1,400	-	1,400
1880	181,800	-	181,800
1890	364,540	-	364,540
1900	987,440	-	987,440
1920	347,070	224,642	571,712
1930	731,149	327,361	1,058,510
1934	854,414	323,306	1,177,720
1939	619,795	29,146	648,941
1944	112,013	42,686	154,699
1949	339,324	31,543	373,867
1954	107,278	32,284	139,562
1959	126,751	54,710	181,461
1964	94,894	32,206	127,100
1978	55,585	73,764	129,349

* Pershing County was organized from part of Humboldt County in 1919.

SOURCE: U.S. Department of Commerce, Bureau of Census. Census of the United States, "Agriculture" 1870 to 1978. Government Printing Office, Washington, D.C.

ADDITIONAL READING

Connor 1921
Fleming 1940

Fleming 1937
Georgetta 1965

Towne 1945
Wentworth 1948

Horses, Mules and Burros

Fossil remains indicate that the prehistoric ancestors of the modern horse were present in North America as early as 55 million years ago. While living on this continent the horse evolved from the small browsing Eohippus into the larger, grazing Merychippus. However, about 2.5 million years ago before it had evolved into the modern Equus caballus, the horse vanished from North America and the final evolutionary stage took place in Asia. Fossil evidence suggests that the horse reappeared in North America about 600,000 B.C. Equus caballus remained on the continent until approximately 8,000 B.C. when it disappeared once more, possibly because of excessive hunting pressure, epidemics, or genetic problems (Thomas 1979:17-19).

In the Winnemucca District fossil evidence of Merychippus, Hipparion and Nechipparion, from the first period during which prehistoric horses were present in North America, has been found in the vicinity of Rabbit Hole Springs, Brady Hot Springs, Hazen, Jersey Valley, High Rock Canyon and other locations. From the second period, fossil remains of Equus occidentalis dating from approximately 60,000 to 70,000 B.C., have been found in the vicinity of Rye Patch Reservoir (Lawler 1978).

After 8000 B.C. North America remained devoid of horses until the ships of early Spanish explorers brought them across the ocean from Europe to the newly discovered continent. The first horses brought to the New World were those transported by Columbus to the island of Hispaniola on his second voyage in 1493. Breeding farms were established on Hispaniola as well as in other parts of the West Indies, Puerto Rico, and Cuba in order to provide horses for Spanish exploring parties. Ponce de Leon brought horses from either Cuba or Puerto Rico to the coast of Florida in 1521. Other mounted Spanish expeditions entered and traversed North America during the remainder of the 16th century. According to legend, America's vast herds or roaming wild horses originated from the runaway steeds of these Spanish conquistadors. However, this is unlikely since the Spanish always rode stallions. Even if a few mares had been brought along, strays would have quickly been slaughtered by Native Americans who only appreciated horses for their food value at that time. The accounts of late 16th and early 17th century Spanish explorers and settlers also indicate the complete absence of wild horses in North America during this period (Thomas 1979:22-23).

In 1598 Juan de Onate established a Spanish settlement near present day Santa Fe, New Mexico. Onate's settlement was significant because it was instrumental in the subsequent spread of the horse throughout North America. Also, the first burros in the present United States were probably brought in by Onate. Spanish explorers and settlers imported burros into Latin America primarily for use as beasts of burden, but also for the purpose of breeding mules. Onate brought burros with him from Mexico when he established his colony. They were used extensively in pack trains which transported goods between his colony and Chihuahua, Mexico (Thomas 1979:24, 176-177; Bryan 1979).

The Spanish settlers living in Oñate's colony entrusted the care of their horses to the local Indians. In this way the Indians learned how to use horses for transportation and by 1659 there is documented evidence of Indians in that area being mounted. In 1680 Pueblo Indians overthrew the Spaniards at Oñate's colony, taking possession of their horses. From that time on, horses began to spread northward and eastward through North America as Indians traded their excess horses to neighboring tribes. By 1690, Shoshones to the north of the present Winnemucca District possessed horses but the Shoshones and Paiutes of the study area did not acquire horses until after white contact (Thomas 1979:24-25, 36; Steward and Wheeler-Voegelin 1974:97).

It was not until after the Indians became well mounted that wild horse herds began to develop in America. Roaming herds of mustangs originated from the abandoned horses of ranches and colonies raided by Indians. The herds were augmented with exhausted or excess horses Indians released onto the open range. By the late 1700s and early 1800s, wild horse numbers in North America peaked at approximately two million. However, the majority of these were located in the southwest, with very few wild horses being found in the north until the mid-1800s, due largely to their later introduction to that region (Thomas 1979:29-30).

Early explorer, trapper, and emigrant journals indicate that there were no horses, either wild or domestic, in the Winnemucca District at the time of white contact. Apparently, the first horses to enter the district lands were those used as mounts by members of Peter Ogden's fur trapping expedition in the fall of 1828 (it is possible that feral horses could have migrated in from other areas and were killed and eaten by local Indians previous to white contact, but there is no archeological evidence to support this at present). Horses remained scarce among the Indians of this area for many years after white contact but were gradually acquired by them after immigration began in the 1840s (Steward 1938:152-153; Steward and Wheeler-Voegelin 1974:92-97).

A few Indians may have been in possession of horses as early as 1829. Ogden reported a confrontation with a party of mounted Indians in the spring of 1829 in the vicinity of Humboldt Lake:

When rounding a point within site of the lake, 20 men on horseback gave the war cry We saw rifles ammunition and arms among them and I think this must be the plunder of Smith's party of 10, who were murdered here in the fall. (Ogden 1910:395).

However, either Ogden's description of his location or of the circumstances of this occurrence may have been inaccurate since Jedediah Smith's party was attacked by Mohave Indians 600 miles to the south of Humboldt Lake in 1827. Also, Ogden's description of the war party did not fit the local Paiute at all and other parties passing through this vicinity during the next few years described the Indians as being unmounted (Steward and Wheeler-Voegelin 1974:92).

Recent findings by Layton (1981) suggest, however, that the Humboldt Sink may actually have been a trade center on a Native American trading route which ran between the Plateau and California. Layton presents evidence which indicates that this route may have passed along the Humboldt River. He suggests

that California Indians transported horses and manufactured goods to the Humboldt Sink where they met with potential buyers such as the emerging predatory bands of Warner Valley and Walker Lake. Thus, although local Paiute and Shoshone probably did not procure horses at the Humboldt Sink trading center due to lack of "a resource valuable enough to sustain trade," horses may have been passing through the Winnemucca District along the Humboldt River long before white contact in the 1820s (Layton 1981:135).

In January of 1844, while enroute to the Pyramid Lake, John C. Fremont remarked on what appeared to him to be horse tracks on an Indian trail which passed along the base of the Fox Mountains at the western edge of the San Emidio Desert:

We found here a broad and plainly trail, on which there were tracks of horses, and we appear to have regained one of the thoroughfares which pass by the watering places of the country (Fremont 1845:215).

Fremont's description of the Indians he subsequently encountered at Pyramid Lake makes no mention of their being mounted. However, emigration had begun along the Humboldt Route in 1841 and trappers had been in the area for several years so some horses may very well have been acquired by the Indians by the time Fremont passed through. In November of 1845 a trapper named Kern, while at the east end of the Humboldt River, noted that the Indians in that area had "a few horses among them." (Steward and Wheeler-Voegelin 1974:94)

The journals of Ogden, Fremont and users of the emigrant trails note frequent instances of horses being stolen by the local Indians. A major reason most local Paiute and Shoshone did not become mounted, or even own many horses, for a number of years after white contact was that initially most captured horses were butchered and eaten. Slaughter of the horses provided the Indian with fresh meat and also prevented the horses from eating the seeds on which the Indians depended for food (Steward 1974:69, 75). The following quote from Alonzo Delanos' 1849 Applegate-Lassen Trail Journal depicts one such incident:

The horse lay near the road, and the gentlemen Digger Epicures had cut off his head and taken a large steak from the hind quarter generously leaving the remainder of the poor raw-boned carcass for the maws of the white devils who had brought it so far to grace an Indian board. . . . We kept a strict guard through the night . . . yet notwithstanding our caution, the Indians came down from the hills and drove off one cow and one horse, and badly wounded two more horses A volunteer party, as usual, was formed to pursue the robbers Suddenly they were brought to a stand by a loud noise above them, and looking up, they saw the marauding party on a high rock a thousand feet above, making sounds of derision and defiance at them. It was deemed useless to follow them any further" (Delano 1936:83).

Eventually, local Shoshone and Paiute came to appreciate the mobility which the horse could provide them. After settlers moved into the area, whole bands of Indians became mounted and armed. They raided ranches, taking horses and other livestock for a number of years until military presence in the area finally suppressed their activities (Steward and Wheeler-Voegelin 1974:88).

As indicated in earlier discussion, there is little evidence that Nevada's band of wild and free roaming horses have a direct connection with the herds of feral Spanish horses which flourished in other parts of the west during the late 18th and early 19th centuries. Rather the origin of the District herds, burros as well as horses, very largely lies in stock abandonment or released on the open range or lost to Indians, by early settlers, miners and ranchers. As Thomas states, these herds were "as much a melting pot of breeds as were the settlers and ranchers who established their homes there" (Thomas 1979:36). As will be discussed subsequently, some of the Winnemucca District's wild horse herds may have originated from Spanish horses purchased from California horse breeders by early settlers (Amesbury 1967:22-23). However few, if any, present-day wild horses have direct bloodlines to Spanish stock due to interbreeding which occurred with released or escaped horses of later settlers and ranchers (Paradise URA, Wild Horses: Introduction).

The demand for horses, mules and burros and the numbers present in the District have fluctuated through time, influenced as they have been by various national and world events as well as by the changing nature of American life-style and attitudes. Initial local demand for these beasts of burden was created by the mining boom of the early 1860s. Burros were utilized by early prospectors as mounts as well as for pack animals. They made excellent pack animals as they were able to carry large loads and subsist on the sparse desert forage. Horses and mules were needed to haul ore from the mines and to power some milling equipment (Wagner 1970:251, 243). Horses, as well as mules and burros were the main source of power and the primary means of transportation in the nineteenth and early twentieth centuries. They pulled freight wagons, stages and all manner of conveyances, as well as being used as riding mounts. The recollections of Pete Pedroli, a long-time Winnemucca resident, gives some conception of the degree to which horses were used. In 1913, while visiting Oreana, Pedroli recalls seeing "20 freight teams and 300 work horses used to haul ore from the mines." According to Pedroli, a freight team "had probably 22 head of mules strung out and maybe six or eight horses." Cattlemen Millen and Lux had large freight teams pulling three wagons hitched together to transport supplies from the railhead at Winnemucca to their ranches in outlying areas. The smaller ranches had smaller teams consisting of approximately eight horses which they used to pick up supplies in town two or three times a year (Freeman 1980:2).

Horses also played an important role in the livestock industry where a good cow pony was essential to working the herd effectively. A special relationship existed between the cowboy and the horse he was dependent upon for his work, his pride, and sometimes his survival. Pete Pedroli describes the value he, as a buckaroo, placed on his horse.

The spirit of the cowboy in them days was to make a good range horse, a horse that could turn, work a cow. Out in the brush we didn't have nobody to show them to. When we came to town, well, I bet my horse was better than yours. If your horse worked better, you got my money (Freeman 1980:2).

In the farming industry horses and mules were used to pull plows, harvesting machines and other types of farm equipment.

During the early days of settlement, homesteaders and other land users often brought their own saddle and draft horses, burros, and mule teams to Nevada. As the demand for horses grew, some ranchers began to raise horses to sell. One of the earliest horse operations in the District was in the Smoke Creek Desert. During the drought years of the early 1860s Frank Murphy (who was also the co-founder of the salt works at Buffalo Meadows) and a man named Lanigar reportedly rode to San Diego where they were able to purchase 500 Spanish horses for a mere 50 cents a head due to the scarcity of feed in California at the time. The horses were trailed north to the Smoke Creek Desert and released in what is now known as Wild Horse Canyon. According to Amesbury this was "the start of wild horse herds in this northern country," descendants in later years being described as the "finest of the wild breed" (Amesbury 1967:22-23).

As in the above instance, some of the District's wild horse herds originated as the result of large numbers of horses being imported into the area for the purpose of starting herds of high quality stock which would command a good market price. Ranchers and settlers also turned draft and saddle horses loose on the open range to pasture, re-capturing them as the need arose. Other horses escaped from early settlers, were abandoned by farmers, ranchers and miners who went out of business or were set loose to graze on the open range when hard times made feed unaffordable. Released or abandoned horses commonly became feral and came to be referred to as "wild" horses or mustangs. Herds of feral burros arose in a similar manner, but their numbers were far fewer.

Once the herds were established, it was common practice to release high-grade stock into a herd of wild horses in order to improve its quality. For example, in 1910 after John G. Taylor, the sheep baron, bought eight or nine thousand horses from I. V. Button who ran them on the Owyhee Desert Tableland east of Paradise Valley, he reportedly turned 70 of the best stallions he could find loose in their midst (Georgetta 1972:373).

Between 1870 and 1898 horse prices dropped as horse ranching increased in the west. Wild horse herds expanded as the ranges filled up with unbranded and unbroken horses. Large herds of wild and free roaming horses were present in Nevada from about 1885 on (Thomas 1979:37-38).

According to United States Census figures horses steadily increased in Humboldt County from a reported 365 in 1870 to a high of nearly 16,000 in 1900. Mules and asses are reported to have increased from 78 mules and burros in 1870 to 331 in 1900. It is uncertain, however, whether these figures include feral animals (United States Census, 1870-1900, Humboldt County).

Even the harsh winter of 1889-90 which decimated a large proportion of the cattle and sheep in Nevada did not reduce the horse population significantly. A letter to the editor of the Silver State that winter stated, "In horses the death rate has been much lower generally than any other kind of stock, but in some sections they too succumbed in considerable numbers to the untold rigor of the unusually severe Winter" (Silver State, March 5, 1890).

Survival rate was probably higher among horses partially because, unlike cattle and sheep, they pawed through the snow to get to the sparse forage supplies. One Humboldt County livestock operator reported that "horses wore hair off their nose and legs, pawing and rooting in the snow for something to eat" (Silver State, February 13, 1890). Other Humboldt County ranchers reported horses coming in off the range in the spring "with manes and tails eaten completely off by other horses" (Hazeltine 1960:4). What losses there were, were overshadowed by the increases of population due to reproduction. Census records for Humboldt County show an increase of nearly 8,000 horses between 1880 and 1890 (U.S. Census 1880-1890, Humboldt County).

The vast herds of feral horses which roamed the District lands at the end of the nineteenth century put additional pressure on the rangelands which were being depleted by massive numbers of sheep and ever growing numbers of cattle. Ranchers viewed wild horses as being a basically non-productive use of rangelands and resented the horses' competition with cattle and sheep. In response to the complaints of livestock operators the Nevada State legislature passed a law in 1897 which permitted the killing of "unbranded horses" which the law referred to as being "worthless and overly abundant. The law was repealed in 1901, however, when some mustangers were caught selling branded hides to dealers (Thomas 1979:40).

In 1898 the Boer War in South Africa and the Spanish-American War created a large demand for military mounts and caused horse prices to escalate. Horse breeding in the west was stimulated and many wild horses were rounded up, broken and shipped overseas. After the Boer War ended in 1902, the value of horses declined once more and roundups became less frequent. Between the demands of the military and the law legalizing slaughter of wild horses, Nevada's wild horse population was considerably reduced during the first years of the twentieth century. This eased some of the pressure on the range, but since the best horses had been captured for sale, the quality of the herds deteriorated. A quote from "Silver State" editor Allen Bragg describing a visit to McDermitt in 1905 indicates that the District's feral horse herds were being harvested at this time for a number of purposes for which the quality of the stock procured was unimportant:

There comes. . . a St. Louis horse buyer, looking for fat mustangs and range horses. The fat mustangs go into the eastern soap vat, the "corned beef" can, the bones and blood into fertilizers to enrich the soil east of the Rockies and west of the Sierras, the hide into leather, and the mane and tail into bristles and brushes (Bragg 1976:58).

By the beginning of World War I, wild horse herds had expanded and were exploited once again to provide military mounts for the Allied nations. The United States supplied over a million horses to England, France, and other countries during the World War I era. Ranchers made a concerted effort during this period to upgrade the quality of the herds by turning good stallions and mares loose on the range (Thomas 1979:38-40).

During the 1920s and the early 1930s wild horse herds increased once more, largely due to the cessation of the wartime demand for military mounts. In addition, herds were being augmented during this period by horses which were retired to the range as they were replaced by automobiles. Ranchers and farmers in this area, however, continued to make extensive use of work horses until farm labor shortages during the World War II era caused them to switch to more efficient gasoline fueled machines (Ugalde 1981). Some local ranchers continued to use horses for farming even after World War II. Andy Jackson, who ranches in the Black Rock Desert vicinity, recalls using horsedrawn harvesting machinery at Black Rock Spring as late as 1954 (Jackson 1981). During the Great Depression farm horses were often abandoned to the range when farmers and ranchers went out of business (Thomas 1979:39-40).

Mustanging was inhibited somewhat by passage of a state law which required mustangers to post a bond with the county in which they were intending to capture horses prior to commencing roundup operations (Thomas 1979:40). Local wranglers were obliged to advertise their planned roundup in the newspaper for 30 days. If no one raised any objections to the roundup during this period the wrangles would post a \$2,000 bond in case a branded horse was maimed. These requirements were not always observed, however (Boyles 1981).

Some horses were captured for use in rodeos where riders displayed their skill and daring by staying astride "bucking broncos" as long as they possibly could. Pete Pedroli, referred to by some as "the best wild horse bronc rider in Northern Nevada," recalls helping to bring in 400 wild horses for the Winnemucca Rodeo in 1930.

Pedroli also broke horses for Charlie Ferrel who had 600 to 700 head at his ranch at the Toll House and gathered wild horses on the desert (probably the Owyhee) for Bob Wilkenson of McDermitt. According to Pedroli, "The ones we broke he shipped to the Palo Alto Police Department. The others that were too snorty, he sold to some cow outfits in California" (Freeman 1980:2).

During the late 1920s and early 1930s some horses were slaughtered and sent to Europe in the form of smoked and chopped meats for human consumption. During the late 1920s, also, wild horses and some broken down domestic horses began to be shipped to California to be manufactured into chicken feed. An added inducement to horse dealers was provided by the railroad's special "chicken feed" rate which allowed them to ship horses very cheaply to California under the condition that the horses did not need to be watered or fed during their trip to the slaughter house (Thomas 1979:43).

In 1934 the Taylor Grazing Act was passed, requiring ranchers who grazed horses on the public lands to have base property on which to pasture them five months of the year and to have a permit and pay a fee for grazing on the public lands the other seven months of the year. Violators faced trespass fines and impoundment of their horses. Many horse ranchers and horse runners who could not or did not want to fulfill these requirements went out of business and let their horses run wild. The law also provided for direct government participation in wild horse control. Feral horses at that time were generally viewed as pests which were depleting the ranges and competing with cattle and sheep. Consequently, the Grazing Service, and later the Bureau of Land Management, undertook wild horse roundups in conjunction with ranchers and stockmens' associations. Nevada's horse population was

not significantly reduced by federally sponsored horse gatherings, but in many other states wild horse populations were seriously reduced by them (Thomas 1979: 42-43, 49-50; Dennett et al. 1981:11).

The development which did eventually cause a large reduction in Nevada's horse population was the growth of the canned pet food industry which began in 1934. As more and more Americans migrated to the cities from the farms where scrap food for pets had been amply available, the manufacture of canned dog and cat food became a burgeoning industry (during the depression many impoverished Americans also depended on canned pet food as a cheap source of protein). Since horse meat was the major ingredient in canned pet food, mustanging increased in response to the growing demand. The largest number of horses captured for this purpose came from Nevada with more than 100,000 being removed from the state during the 1940s and 1950s. Some domesticated horses were also shipped out for this purpose (Thomas 1979:43, 55).

Many ranchers, buckaroos, sheepherders, and townspeople in the Winnemucca District supplemented their income by rounding up feral horses and burros. Some ranchers reportedly put the profits gleaned from mustanging in a special fund which was used to put their children through college (Majewski and Jones 1980). Some horses were sold to private parties for use as riding mounts, the small-sized horses being especially well suited as children's riding ponies. Captured horses often were taken to the sale at Fallon where some were purchased as saddle horses and others were bought by chicken feed or pet food dealers (Boyles 1981). Some wild horses captured in the Winnemucca District also were converted into fertilizer in a factory which was located in Winnemucca. Most horses processed in the factory were brought in from the Owyhee Desert and surrounding areas.

Mustanging was as much a sport as it was a means of augmenting income. It was the thrill of the chase and the challenge of capturing the swift-footed equines which attracted many wranglers to mustanging. Heather Thomas Smith states, "To capture and ride the wildest, most fleet and beautiful mustang in the herd was the highest ambition of many cowboys. . . ." (Thomas 1979:45).

Indicative of the recreational value placed on mustanging is the fact that sometimes the horses were released after they were captured (Boyles 1981).

Long-time residents of the District and those who participated in roundups, generally believe that harvesting wild horses helped to control the quality as well as the quantity of the herds. In their view, mustangers culled out inferior horses for sale to pet food dealers and left the best stock on the range to reproduce. Some wranglers also reportedly castrated poorer quality stallions (Jones and Loomis 1979:54; Thomas 1979:469).

A variety of methods were employed by mustangers in capturing wild horses and burros. Individual animals were commonly chased and roped from horseback or snared. Snaring was accomplished by means of a loop of rope or a wooden box planted at a water hole, salt lick, or along a trail frequented by feral herds. Rope snares entrapped the foot or head of the animal. The wooden foot trap, developed in Nevada in 1911, would trigger a rope when stepped in which would ensnare the horse's leg. A log attached to the rope left a trail when dragged which was followed by mustangers. "Walking down" was a method of pursuing horses until they became so fatigued that capture was easily accomplished. Two or more mounted persons might take turns following the

herds but it was possible for one persistent person to "wear down" a herd. The pursuit usually took several days. "Creasing" with a bullet in the neck area theoretically stunned a horse so that it could be captured. However, usually the bullet killed the horse by breaking its neck or missed and scared the horse away (Thomas 1979:45-47).

Groups of horses were generally driven into concealed horse traps constructed in canyons and brushy hollows or springs, water holes, or creeks frequented by wild horses and burros. The basic design of the horse trap was of Spanish origin. It consisted of a corral built in a circular form for the purpose of preventing horses from being crushed or injured in corners. Two wings attached to either side of an opening in the corral funneled the horses into the trap. Sometimes two corrals in a figure eight configuration were used, the second providing a holding corral. Traps were often constructed out of non-permanent materials which were readily available. These included cottonwood and juniper posts, brush, whole trees, and logs held together with woven wire. Sheet metal, barbed wire, and cable were also used in combination with posts. Piled stone may also have been used (Dennett et al. 1981:111-112). The portable canvas corral developed by Pete Barnum in Nevada in 1910 was a very successful type of horse trap. Rolls of canvas to be hung on cottonwood posts could be transported on horseback to inaccessible areas, set up quickly and quietly without alerting the wild horses and could be moved and set up again quickly at a different location if the first did not work (Thomas 1979:45).

Airplanes and trucks began to be commonly used in horse roundups in Nevada during the 1940s and 1950s (Thomas 1979:63). The film "The Misfits," parts of which were filmed in the Winnemucca District in 1960, documents one of the methods utilized in horses roundups in this area. In this film an airplane is used to locate horse herds and to chase them from the mountainous terrain to the playa where they are pursued and lassoed from a truck and anchored with a tire attached to a rope. The movie also deals with the clash of values and attitudes between those who favor mustanging and those who favor preservation of wild and free-roaming wild horses (Miller 1961; Crane 1981).

In some instances, the demand created by the pet food industry changed the nature of wild horse roundups. Some wranglers utilized inhumane techniques in capturing and transporting horses to the pet food manufacturers. As instances of maiming, mutilation and other brutalities became publicly known, national sentiment began to gather in favor of preservation of the wild horse. In response to immense public outcry, a series of national laws were passed which dealt with management of wild horse and burro herds. The first, Public Law 86-325, passed in 1959 forbade the use of motorized vehicles in capturing or killing feral horses and burros. The Wild and Free Roaming Horse and Burro Act passed in 1971 charged the Departments of the Interior and Agriculture with management and control of wild horses and burros on the public lands. The Federal Land Policy Management Act passed in 1976 legalized the use of helicopters by the BLM in gathering horses and the use of motorized vehicles in transporting them. The Public Rangelands Improvement Act of 1978 authorized inventory and study of the wild horse and burro populations, as well as restoration of the ecological balance of the range through removal of all excess horses and burros (Bryan 1979).

TABLE 8
HORSES, MULES AND BURROS-
HISTORICAL CENSUSES

	HUMBOLDT CO.	PERSHING CO.	TOTAL
1870			
Horses	365	-	365
Mules and burros	78	-	78
1880			
Horses	3,311	-	3,311
Mules and burros	145	-	145
1890			
Horses	11,107	-	11,107
Mules and burros	156	-	156
1900			
Horses			
On farms and ranges	15,677	-	15,677
Not on farms and ranges	149	-	149
TOTAL	15,826	-	15,826
Mules and burros			
On farms and ranges	329	-	329
Not of farms and ranges	2	-	2
TOTAL	331	-	331
1910			
Horses			
On farms and ranges	8,804	-	8,804
Not on farms and ranges	594	-	594
TOTAL	9,398	-	9,398
Mules and burros			
On farms and ranges			
Mules	404	-	404
Burros	133	-	133
Not on farms and ranges	65	-	65
TOTAL	602	-	602

1920				
	Horses			
	On farms and ranges	4,067	3,144	7,211
	Not on farms and ranges	75	147	222
	TOTAL	4,142	3,291	7,433
	Mules and burros			
	On farms and ranges			
	Mules	183	146	329
	Burros	66	4	70
	Not on farms and ranges			
	Mules	167	4	171
	Burros	4	-	4
	TOTAL	420	154	574
1930				
	Horses on farms	3,274	1,369	4,643
	Mules on farms	259	174	433
1935				
	Horses on farms	3,983	744	4,727
	Mules on farms	62	81	143
1940				
	Horses over 3 mos. on farms	3,145	1,057	4,202
	Mules over 3 mos. on farms	118	48	166
1945				
	Horses on farms	3,306	1,369	4,675
	Mules on farms	105	43	148
1950				
	Horses on farms	2,746	651	3,397
	Mules on farms	97	30	127
1959				
	Horses and/or mules on farms	1,572	556	2,128
1964				
	Horses on farms	713	369	1,082
1978				
	Horses on farms	1,438	364	1,802

SOURCE: U.S. Department of Commerce, Bureau of Census. Census of the United States, "Agriculture" 1870 to 1978. Government Printing Office, Washington, D.C.

Horse roundups undertaken by the BLM are similar in nature to those undertaken in the past. Horse traps are of the same winged circular corral design, but are constructed out of portable metal panels which are assembled at the trap site. Helicopters are utilized in the roundup as well are wranglers. A "judas" horse, trained to run into the corral, is released in front of the oncoming herd as it approaches the trap site for the purpose of leading the horses into the trap. Disposal of captured horses has been effectively accomplished through the Adopt-A-Horse program. Horses are adopted as pets, pleasure horses and work animals (USDI, BLM 1981b).

Since the passage of the Wild and Free Roaming Horse and Burro Act in 1971 wild horse and burro herds in the Winnemucca District have increased from approximately 4,000 horses and burros to an estimated 7,817 feral horses and 179 feral burros presently (Sonoma-Gerlach EIS 1981:2-25). The increased competition with other livestock grazing in the District and intensification of the problems caused by feral horses has embittered local ranchers toward wild horses, the laws which protect them and the BLM which manages them. Wild horse protection proponents, on the other hand, call for even greater protection of what they consider to be "an integral part of our national heritage and a living symbol of freedom and outdoor spirit" (USDI, BLM 1981:2-42, 2-43).

In addition to wild horses, there are approximately 1,800 horses on farms and ranches in Humboldt and Pershing Counties (Preliminary U.S. Agricultural Census--Pershing Co., Humboldt Co. 1978). Although motorcycles and 4-wheel drive pickups are used to do some of the ranch chores formerly performed on horseback, local ranchers, buckaroos, and sheepherders still make regular use of horses in tending their herds (Majewski and Jones 1980; Marshall 1980:xii, 17, 29). Some horses are also sold to dealers for shipment to Belgium, France, and Japan for the purpose of human consumption (Boyles 1981).

Additional Reading

Brookshire	1974	Simpson	1951	Wyman	1945
Dobie	1934	Steele	1909	U.S.D.I. BLM	
				NSO, Public Affairs	

CONTEMPORARY CULTURES

Chinese

The Chinese are an ethnic group who played a brief role in the history of the Winnemucca District. Little evidence of their existence remains. Miscellaneous artifacts were recovered prior to the construction of the present Humboldt County Library, built on the site of Winnemucca's former Chinatown on Baud Street. Remaining structures include the Chinese Grade, constructed up Martin Creek from Queen City early in the 1880s by Chinese laborers. The grade was built for the purpose of exploiting an extensive mountain mahogany stand on upper Martin Creek intended for use as fuel in the ore reduction mills at Queen City. Between 1889 and 1892 the road also provided access to the placer mining camp known as Hardscrabble (Goodwin 1966:4-6, Little Humboldt Sub-basin Section). Remains of Chinese settlements are also reputed to exist on Wash O'Neil Creek (Tingley 1977), as well as American Canyon and at Fitting. Chinese workers undertook placer mining operations at American Canyon and Fitting Spring Valley (Browne 1972; Paher 1970). Unionville also had a large Chinese population, many of whom reworked the dump after the white population left (Forbes, McCaughey and Mordy 1966). Lovelock had a Chinese settlement which thrived during the early 1900s but it, like others, has faded away (Hattori, Rusco and Tuohy 1979).

Chinese workers undertook extensive placer mining operations at Dutch Flat from 1909-1910 and near Willow Creek Station (about ten miles north of present-day Oroville) as early as the 1870s (Paher 1970:143, 149). Although Chinese burials were quite frequently temporary, the remains being shipped to China for reinterment at the earliest opportunity, several Chinese graves were among the burials in the small cemetery formerly located on the site of the present Pioneer Park in Winnemucca. The entire cemetery was later shifted to its present position, between Highway 95 and the Humboldt River (Hanley 1975:215; Tingley 1977).

Part of the explanation for their lack of lasting impact on the area lies in the fact that the Chinese were sojourners in America rather than immigrants to this country. During the mid-1800s China was in a state of political, social, and economic turmoil following her defeat by Great Britain in the Opium War of 1839 which shattered her "closed door" policy. News of the discovery of gold in California and the good wages to be had resulted in shiploads of Chinese (mostly Cantonese from the Pearl River Delta area in the vicinity of Hong Kong) arranging their passage to California on the "credit-ticket system"--a system by which they indentured themselves to Chinese merchants. Their intent was to pay off their debt with riches they imagined they would earn in America. Practically all who came were men. The few females who made the journey were generally prostitutes. Most came for the express purpose of saving up enough money to return to China and spend the rest of their lives as affluent, respected citizens. It was, in part, this dream which enabled the Chinese to endure the extreme drudgery and long hours of their work. However, their consequent lack of commitment to America and resistance to acculturation served to embitter the American public toward them (Chinn 1969:2-22; Barth 1964: Forward).

The first recorded Chinese in Nevada were ditch diggers who worked in Dayton in 1852. The silver rush to Nevada mines in the late 1850s precipitated an influx of Chinese into Nevada from California. Anti-Chinese riots in California in the 1870s were another force which pushed Chinese eastward. The Central Pacific Railroad which reached Winnemucca in 1863 also made heavy use of Chinese labor and in the 1860s and 70s many Chinese settled along the route of the railroad in Humboldt County. The completion of the railroad in 1869 and a decline in gold mining created a labor surplus which added to the mounting discrimination against Chinese. Excluded from mining, the Chinese took menial jobs and migrated to the larger urban areas, particularly Carson City and Virginia City. The passage of the Chinese Exclusion Act in 1882 was effective in curtailing new immigration to the United States until its repeal in 1941 (Mazetti 1976:2, 14-15, 21; Chinn 1969:23; Barth 1964:187).

Few Chinese were able to pay off the debt of their passage, let alone realize their dream of returning to their country as wealthy citizens. Eventually they accepted their failure and gradually some acculturation took place. Archeological and historical research is gradually providing a better understanding of the process of acculturation in the Chinese community.

The only major research project in the Winnemucca District involving the Chinese presence here is the recent Nevada State Museum study of the Chinese settlement in Lovelock (Hattori, Rusco and Tuohy 1979). Excavation of Chinese dwelling sites was undertaken between 1975 and 1977 and yielded over 20,000 artifacts, including a cache of 112 gold coins. The large percentage of bovine remains indicates that Chinese in Lovelock were gradually acquiring American food habits. The report analyzes the many other types of artifacts found and utilizes census records, oral history, newspaper accounts, etc., in discussing the history and demography of the Lovelock Chinese.

It concludes that the Lovelock Chinatown flourished during the 1910s and '20s primarily providing services, e.g., restaurants, laundries and hotels, for the white community. Chinese were also engaged in gambling, mining and ranching activities. The Depression and an increase of white owned restaurants and other services apparently combined to cause the Lovelock Chinatown to dwindle away to almost nothing by the 1940s.

A Chinese camp in Paradise Valley has also been excavated as part of the Library of Congress American Folklife Center/Smithsonian Institute study of Paradise Valley but the results have not been published as yet.

Basques

The Basques immigrants, unlike the Chinese, became fairly well integrated into Nevada society and today form an important part of the population of the Winnemucca District.

The Basques immigrated to this country from their homeland in the Pyrenees, their nationality being either French or Spanish depending on which side of this mountain range they originated. During the 19th century the lives of the Basque people were disrupted by civil war in Spain and revolution in France. This, combined with heavy taxation, drought, the drudgery of factory work and restrictive land-inheritance and land-tenure practices, made immigration to America an attractive option. Most Basques who made this decision were single males in their middle and late teens who came intending to work as sheepherders and to save sufficient funds to return to their homeland to settle and purchase their own herds. Though some accomplished this objective, many bought their own herds and property in America, returning home only temporarily to acquire Basque brides. Some Basques also established a pattern of alternately working in America as shepherds and returning to their homeland for periodic stays during which they were able to live in relative luxury. This is a practice which is still being followed by some Basque shepherds working in this District (Douglass and Bilbao 1975:129-132, 262).

The first Basques immigrated to California from Europe and South America. Many from the latter continent had previous experience in the sheep industry. During the 1880s and 1890s the greater Winnemucca region was the major Great Basin destination of those Basque emigrants not bent on reaching California, although newspaper articles indicate that a few Basques were in this area in the 1870s. The area was attractive to prospective sheepherders because of the vast amount of public land and because the area, with its low desert range adjacent to high mountain summer pasturage, was ideal for transhumant sheep outfits (Douglass and Bilbao 1975:259). Many Basques worked in Nevada on a seasonal basis--spring and summer in Nevada and autumn, winter, and early spring in California. This arrangement was well suited to the labor demands in these two areas and it also enabled the sheepherders to avoid the freezing winters of the Great Basin and the hot summers of California (Douglass and Bilbao 1975:302).

The Basques' adaptation to their new environment was helped by the Basque hotels and Basque clubs. Basque hotels, such as the Winnemucca Hotel and those in Golconda and Lovelock, provided the new emigrant with lodging and a base where he could meet prospective employers and others who spoke the Basque language. Basque clubs aided members in learning the English language, in passing citizenship tests, and provided financial aid and opportunities for group recreation. Also helpful in leading to successful integration was the generally success-oriented, self-reliant character of the typical Basque immigrant, which fitted well with the American character.

Additionally, as shepherds, the Basques were both fairly invisible as a social presence in the towns and filled a niche which was not competed for by other elements of society (McCall 1973:18, 35-42).

Today few sheep operations remain in the area, but Basques are involved in ranching and various commercial enterprises as well as being influential in local politics. Basques maintain a strong ethnic identity and are fiercely proud of their heritage. There is an active Basque Club in Winnemucca and a Basque Festival is held in Winnemucca once a year. This festival, and others like it throughout the Basque inhabited regions of Western America, serves to indoctrinate young Basques into the culture of their forefathers' native land and to reinforce ethnic identity in older Basques. The festival includes traditional Basque dances performed by all age groups as well as various contests such as weight lifting and carrying, wood chopping, yelling and sheep herding contests. The Basque language is spoken and native cuisine is served at this event which attracts Basques from miles around.

Another way in which local Basques maintain cultural ties is through occasional visits to their homeland in the Pyrenees.

In the Winnemucca District a unique form of folk art and a record of the Basque shepherds' lonely existence is to be found in the form of carvings on aspen trees. These engravings include names and dates, statements of province and country of origin, expressions of philosophy and political sentiments, and depictions of human figures--most frequently caricatures of voluptuous females but occasionally bereted self-portraits. Other motifs include geometric designs and such everyday objects as daggers, airplanes, and ships. The carvings generally are to be found in aspen groves overlooking meadows where the shepherd camped and whiled away his time as he watched his sheep. These engravings are a graphic record of the role of the Basque shepherd in the range history of the west. However, it is a perishable record as the average life of an aspen tree is only sixty years (Lane 1971; Dekorne 1970).

The BLM has recorded many Basque aspen carvings in the Pine Forest Recreation Area as well as other parts of the District. Dates of those recorded in the Blue Lake/Onion Valley Reservoir vicinity in 1978 ranged from 1902 to 1953 with 1923 being the date most commonly recorded. It is possible that there were carvings predating 1902 on trees which have died or deteriorated (Roney 1979). Slides of many aspen carvings and site record forms describing graffiti are on file at the Winnemucca District Office.

Philip Earl of the Nevada Historical Society has a private collection of rubbings he has made of various aspen carvings. The Basque Study Program at the University of Nevada at Reno is interested in all facets of the Basque occupation of the American West. It sponsors numerous research endeavors concerning Basques and has a large library of published and unpublished literature regarding them.

Mexicans

Persons of Mexican descent constitute a substantial percentage of the population of the Winnemucca District. Although the majority of Mexican residents are relative newcomers to the area, historically there have been ties between this area and Mexico. The land in the Winnemucca District was part of the territory claimed for Spain by early Spanish explorers and from 1821 until 1848 Nevada belonged to the Republic of Mexico. However, there is no evidence of any Spanish or Mexican exploration or settlement ever taking place in the District during this period.

Mexicans and the Mexican culture have had a strong influence on the local live-stock industry. The first sheep drive which passed through the District, the Wooton Drive of 1852, was guided along the Humboldt by several Mexican shepherds. The cowboys of the early California cattle industry were frequently of Mexican descent. Much ranching technology (e.g. methods of working cattle, irrigation systems, horse and riding gear styles, etc.) and vocabulary terms (e.g. "raita", "corral", "chaps" (from "chapparral"), etc.) were borrowed from the Spanish/Mexican ranching tradition. Vaquero, the Mexican word for cowboy, probably gave rise to the local term "buckaroo". Vaqueros were often employed by early cattle ranchers in this area and worked both as itinerant laborers and permanent employees. Today Mexicans are again being commonly employed on ranches because of the difficulty of obtaining buckaroos and ranch hands who will live in isolated areas and work for low pay (Marshall and Ahlborn 1981:12-15).

Some Mexicans migrated northward to work in the mining fields during the latter half of the 19th century, although most of their participation in this activity appears to have occurred south of the District. Mexican labor was utilized by the railroads as well, and it is quite likely that Mexicans were present in the Winnemucca vicinity for this purpose during the periods of railroad construction in this area. Prior to the end of the 19th century Mexican immigrants predominantly settled in those states immediately adjacent to Mexico. After the turn of the century immigration to the U.S. increased and Mexican nationals began to migrate to other parts of the country. In general, they were confined to low paid unskilled jobs, predominantly involved in the harvesting of crops on a seasonal basis. As a transient labor force, they moved throughout the country to harvest various crops. During World War II Mexicans again were employed in large numbers by the railroads, mainly as section hands and laborers. Labor shortages on Nevada farms and ranches during the war were also satisfied by employment of Mexican Nationals through a program sponsored by the Agricultural Extension Service.

In 1951 the "bracero" program began, bringing another major influx of Mexicans into the U.S. (Moquin and Van Dored 1971; Earl 1981b). The majority of the Mexicans in the District have come to the Winnemucca area since 1971, drawn by the need for laborers in the potato fields, packing and processing plants. Estimates for the number of Mexicans in the Winnemucca area run as low as 500 and as high as 3,000. Part of the difficulty in determining accurate population figures is that the actual number of Mexican residents fluctuates. Many are migrant workers who come only to work on the potato harvest. When the harvest is completed they move on to other agricultural areas in the United States or return to Mexico. Others stay on after the harvest to work, if possible, in processing plants, restaurants and casinos, or at other forms of manual labor. Existence is difficult as jobs are not always easily found and, if found, are likely low-paying. They live fairly simple, however, and temporarily unemployed persons are generally aided by their friends, rather than through welfare programs.

At the onset, it was predominantly single males who came to Winnemucca. During the last three years, however, whole families have been migrating to this area. There are presently about 130 Mexican students enrolled in the Humboldt County School District. Bilingual education is provided to Spanish speaking students in the Winnemucca School District.

Poor comprehension of English on the part of the Mexicans has inhibited communication and assimilation. Lack of understanding of local, state and national laws has resulted in frequent non-violent infractions of the law by Mexicans, predominantly driving offenses. On the other hand, misinterpretation of Mexican customs

and ways of life have resulted in resentment toward this ethnic group on the part of some local residents. For example, the tendency of Mexicans to congregate has been a source of intimidation to some residents of Winnemucca who perceive these congregations as "gangs". Other problems involve standards of cleanliness and non-payment of medical bills (the latter is possibly partly attributable to the prevalence of free medical clinics in Mexico and the "patron" system whereby the employer takes care of the employee, including major medical expenses). There is also consternation among local residents concerning the fact that taxpayer dollars are used to educate the children of Mexican nationals who themselves pay no taxes.

In 1979 the Winnemucca Chamber of Commerce was involved in a study funded by a Nevada Humanities Committee grant, which investigated problems caused by the recent influx of non-English speaking Mexicans on schools, medical facilities, and on the economy as a whole (Jones and Loomis 1979:57).

Portuguese

Portuguese emigrated into this area at approximately the same time as the Basques. For the most part they originated from the Azores, small islands off the coast of the Portuguese mainland where farming and sheepherding are the predominant occupations. Initially the Portuguese worked as sheepherders and later they became involved in tending cattle. During the early 1900s several Portuguese families set up small farms on the west side of Lovelock. Some of these continue to be owned and operated by Portuguese families today.

Presently, only ten Portuguese families still reside in Lovelock, but they retain a strong ethnic identity. Each spring a two day Pentecostal "Festa" is held in Lovelock. The whole town becomes involved in this religious observance which features a procession, traditional Portuguese food, dancing, and a fund raising auction. The event is presided over by a "Festa" Queen.

Celebration of the "Festa" is an old Portuguese custom which has survived over six and a half centuries. Comparable somewhat to our American Thanksgiving, the "Festa" commemorates the ending of a period of famine in Portugal in the year 1323. Seeking divine intervention to ease the plight of her suffering people, Queen Isabella of Portugal encouraged her subjects to pray for an end to the famine and vowed to sell her jewels to feed them if a source of sustenance could be found. When seven ships filled with provisions sailed into the Lisbon Harbor a few days after her entreaty, the queen kept her promise. She not only sold her jewels and averted the famine, she also laid her crown on a church altar in an act of thanksgiving. As the Queen walked through the streets to lay her crown on the altar she was joined by the peasants and a modern provision, held in Lovelock annually reenacts this event. A Portuguese society, Irmandade do Espirito Santo (Brotherhood of the Holy Spirit), formed in 1935 has sponsored the "Festa" in Lovelock for the past 48 years, Fallon which has a larger Portuguese population than Lovelock also celebrates the "Festa" but community involvement is not nearly as great as in Lovelock. (McMillan 1982).

Cornish

Only one reference has been found to the Cornish population in the District: "For two or three years, in the early 1860s, Unionville had a larger Cornish population than any other town in Nevada. Some houses with thatched roofs reflected their influence on architecture there" (Forbes, McCaughey and Mordy 1966:63).

Italian

Paradise Valley is one area of the District where a substantial percentage of the early settlers were Italian. Architecture in this area has been strongly influenced by Italian craftsmen.

Native Americans

The historic background of the Native Americans has been covered previously in this report (see Indian/White Interaction, Prehistoric and Ethnographic sections) and will not be discussed here. This section deals with the current status of the Native Americans in the Winnemucca District.

Although intermarriage may have mixed actual tribal ties many Native Americans have strong tendencies to align themselves with particular groups and this is true in the Winnemucca District. Most noticeable are reservations and colonies. Within the Winnemucca District are two reservations, and also a large reservation immediately adjacent to the District at Pyramid Lake.

The Pyramid Lake Indian Reservation was set aside by Executive Order of March 23, 1874, by President Grant. About 600 Paiute Indians live there today. The land is owned by the Pyramid Lake Paiute Tribe and consists of more than 338,900 acres. The Tribal Council makes individual assignments of the agricultural and range lands. All farming is by irrigation and confined mostly to the river bottom area. Principal crops are alfalfa, wild hay, small grains and potatoes. No land is leased to or from non-Indians.

Medical care is provided by the Department of Health, Education and Welfare, Indian Health Services. Clinics are held weekly at Nixon.

Some women still produce craft articles with other older women teaching the younger women. Traditional Indian dance and customs are, however, conspicuously absent. The standard of living is still unsatisfactory and many Indian people depend on welfare assistance and others seek jobs off the reservation (Arthus Grenier 1978).

In the northwest quarter of the District is the Summit Lake Indian Reservation which was established in 1913, and consists of 10,500 acres, including the historical site of Fort McGarry. Although there are approximately 66 tribal members, there are no permanent residents of the reservation. A six-member Tribal Council handles the tribal affairs. A fishery for Lahontan cutthroat trout is located on the Indian lands. Eggs taken here are raised to stock Pyramid and Walker Lakes. Some of the Indians exercise their right to take a limited number of fish each spring during the spawning season. Rangelands are leased out to non-Indian ranchers (HDR Sciences 1980:22).

The remaining reservation in the Winnemucca District is at Fort McDermitt on the northern boundary. Quinn River Camp No. 33 was established in 1865 and renamed Camp McDermitt shortly after in honor of Lt. Col. Charles McDermitt. The post was turned over to the Interior Department in July of 1889 and converted into the present Indian reservation (Carlson 1974).

Approximately 407 Indians live there presently. The reservation is about 2,414.6 acres. The tribe was organized in 1934. Unemployment is quite high on this reservation. As of February 1979 there was an electronics plant still open which employed about 35 people. The Ford McDermitt Stockmen's Association, composed of several

tribal members, also runs a fairly large cattle operation with grazing rights in the BLM Winnemucca and Vale Districts as well as on Forest Service Land. Housing includes 76 family units and 45 mutual family units with additional units approved. Medical, educational and other benefits are handled by the Department of Health, Education and Welfare. There is one physician assistant at the McDermitt Reservation (USDI, BLM 1976:67).

There are no commercial arts and crafts outlets on the Reservation. However, some individuals do beading and tanning for items such as hair ornaments and moccasins. While these craft articles are commonly produced for personal use, family, or friends, occasionally they are sold.

There are apparently no organized Indian festivals but there are occasional get-togethers involving dances, games and picnics (Bob Paisano 1979).

In addition to these reservations, there are Indian colonies at Winnemucca and Lovelock. Concerning the term "colony", the MX/Native American Cultural and Socio-Economic Studies Draft states: "It appears to be a colloquialism for the Indian shanty towns that were tolerated by non-Indian on the outskirts of town in the early 1900s. These shanty towns were later dignified with the term "colony" as land actions ensued to give homesites to homeless Indians" (Facilitators, Inc. 1980:2.6). Funding and benefits for colonies are similar to those received by reservations. However, since space is limited in the colonies, a large number of the tribal members are scattered throughout the towns. These Indians are not entitled to certain benefits that they would receive on the reservations or in the colonies.

The Winnemucca Colony was established by Executive Order for Homeless Shoshone in 1917 but most Indians who reside there now are Northern Paiutes who originated from the Fort McDermitt Reservation. The colony consists of 340 acres and presently has a population of 25 persons. In addition, approximately 200 Indians live off the colony in Winnemucca. There is a high unemployment rate and the income of those employed is generally very low, resulting in a high level of poverty. There is a four-member Tribal Council which meets once a month but no tribal enterprises. Health services are provided through a contract with the Schurz Health Service Unit. Once a month a clinic is held in Winnemucca by a community health medic from the Fort McDermitt Reservation (Facilitators, Inc. 1980:2.146, 2.148, 2.150, 2.155-6). Many Winnemucca Indians have family ties with the McDermitt Reservation and visit there periodically.

The Lovelock Colony consists of 20 acres of land adjacent to Lovelock. In 1967 a tract of land along the Central Pacific Railroad was allotted to the Big Meadows Paiutes by the U.S. Government and the railroad company. A leader of the band later lost the land to white gamblers, leaving the Lovelock Paiutes homeless. For a time they camped on non-Indian land, moving frequently as whites gained title to the land they were living on. In 1907 and 1910 a Lovelock family sold two parcels of land totalling 20 acres to the U.S. Government for use by the Indians. A desire for segregation of Indians from whites apparently motivated the sale (Facilitators, Inc. 1980:2.21, 2.25).

Lovelock Colony residents identify themselves as Paiutes but a great deal of intermarriage with Shoshones has occurred in the past. There are presently 149 Indians living in the Colony. An additional 197 tribal members live mainly within a 200-mile radius of Lovelock. Twenty of the non-colony tribal members live within the Lovelock city limits. There are some ties between Lovelock Indians and those on Pyramid Lake and Fallon Reservations (Facilitators, Inc. 1980:2.21, 2.6, 2.29).

A Tribal Council governs the colony and is housed temporarily in a small gymnasium while a new tribal building is being constructed. There are no tribal enterprises. This largely due to the small land base and the lack of agricultural lands. Unemployment is fairly high and annual income of those employed is low. Seasonal work on ranches, jobs in local tourist industry and a few mining jobs are the main sources of employment. There are also a few federally funded jobs but they pay equally poorly. Lovelock Indians are dependent on hunting and pine nut gathering for food supplementation (Facilitators, Inc. 1980:2.35, 2.44, 2.49).

Medical care is provided by Schurz Indian Hospital, but it is 99 miles distant. A monthly clinic is held in Lovelock by the Schurz Health Service. As in the Indian settlements at Winnemucca and McDermitt, alcoholism is the major health problem.

Alcoholism has been referred to as a symptom of "a destroyed self esteem" and of "cultural disintegration" (Facilitators, Inc. 1980:2.44, 2.48).

Paiutes and Shoshones in the Winnemucca District have relinquished much of their culture and assimilated many white ways during the past century. This is particularly true of Lovelock Colony Indians. Working on white ranches, in white homes, and on the railroad and using their wages to shop in the settlement stores, Indians soon adopted white ways, dress, and eventually building types. Some seed gathering and basket weaving took place in the early 1900s, but the accessibility of goods in stores soon eliminated the need for these time-consuming activities. Children learned English in schools and spoke it at home as well so that now only the very elderly speak Paiute or Shoshone. Despite the assimilation of many aspects of white culture, Indians tend to avoid direct interaction with whites. This is at least partially due to the negative community attitudes toward Indians. (Facilitators, Inc. 1980: 2.17-2.19).

Some portions of the Indian culture have been retained, such as the high value placed on the family, respect for elders, and a reverence for the land. Pine nutting is still practiced in the fall. The harvested nuts are stored for consumption throughout the year or sold locally. Many families camp out in ancestral gathering areas during the harvest period and it is a time of reunion and cultural regeneration (Facilitators, Inc. 1980:2.17-2.19). Hunting is also practiced on the public lands as a means of supplementing food supplies.

Lovelock Indians have identified eleven "sacred" or otherwise "culturally important" sites in the District. Table Mountain, Star Peak area, Seven Troughs and Happy Jack Canyon are important hunting grounds. Table Mountain, Fencemaker Canyon and Lousy Water Canyon are important pine nut gathering areas. Kyle Hot Springs and Limerick Canyon Springs traditionally were used for healing and Kyle was also a site where praying was done. Lone Mountain is valued as an eagle nesting area and as an area where ancestors sought peace and respite from the mosquito infested marshes of the Lovelock area. Lovelock Indians are historically tied to Pyramid Lake, and a migration route between Lovelock and Pyramid Lake through the Blue Wing Mountains is considered a significant cultural use area. Burial sites are commonly located on the route in secret places near where travelers along it died. Because grave plundering is common, Indians generally prefer not to make public the final resting places of their ancestors (Facilitators Inc. 1980:2.6, 2.8-2.10).

Paradise Valley has been identified as being an "ancestral home" of Winnemucca Indians as well as a "culturally important region." In addition, there are "unidentified migration paths, burial sites, hunting and gathering areas in Paradise Valley and the Santa Rosa Mountains" which may qualify as "sacred sites" (Facilitators, Inc. 1980:2.12).

Indian culture is also maintained to some degree by family and tribal reunions at socio-religious festivals and Indian sporting events. Shoshone and Pauites travel great distances, sometimes out of state, to attend special events at other reservations. There is an annual Pine Nut Festival at Walker Lake which draws Indians from all around. McDermitt holds a rodeo each year as well. Hunting and gathering, visiting friends and family, and employment seeking are other stimuli for migration and reunion (Facilitators, Inc. 1980:2.33). A newspaper The Native Nevadan is an Inter-Tribal Council of Nevada publication that serves to keep individuals informed on matters throughout the state.

Some Native Americans have expressed concern about the lack of knowledge of Native American culture and history found among younger tribal members. Some plans for cultural education of Indian youth have been formulated. It is hoped that implementation of these plans and others will help to regenerate self-esteem and ultimately contribute to curbing the high rate of alcoholism and alcohol abuse which plagues Native Americans (Facilitators, Inc. 1980:2.19, 2.44).

Additional Reading

Barrenchea 1961	Douglass 1970	Nason 1964
BeDunnah 1966	Houghton 1979	Shepperson 1970
Carter 1975	Napton 1970	

SOCIO-CULTURAL EVENTS

A significant event in Winnemucca history and an important part of local folklore was the robbery of Winnemucca Branch of the First National Bank by Butch Cassidy (Robert LeRoy Parker), the Sundance Kid (Larry Longabough), and Will Carver, who were all members of the notorious Wild Bunch. The "Great Winnemucca Raid" was the last robbery undertaken by Cassidy and Sundance in the United States before they departed the country for South America. It is believed that the primary purpose of the Winnemucca bank hold-up was to finance their trip south of the border.

Ten days before the robbery the three men set up camp east of Winnemucca on the upper field of the Bank Ranch (near present-day Button Point). F.J. Button, superintendent of the nearby C.S. ranch, had a ten year old son who rode over to the outlaws' camp and became engaged in friendly conversation with them. Inadvertantly the boy, Bic Button, provided the men with information utilized by them in planning their escape route. He also expressed admiration for Cassidy's handsome white steed and was told that someday he would own it.

The outlaws spent the next few days casing the bank (present-day First Federal Savings and Loan Building on the corner of Fourth and Bridge Streets), and scrutinizing the layout of the town. They bantered with the young boys congregated around the livery stable (site of present-day Johnson's Foodtown) and surreptitiously gleaned information from them concerning the town and the trails leading from it. One of the boys who talked to them was Lee Case who still resides in Winnemucca.

Just after noon on September 19, 1900, the outlaws entered the bank and forced the cashiers at gunpoint to deliver over to them a total of \$32,640. The cashier who opened the vault was George S. Nixon who later became one of Nevada's most prominent men. He acquired a sizable fortune through his investment in Goldfield mines and went on to become a United States Senator.

Exiting from the bank, the three men rode down Bridge Street and followed the Humboldt River toward Golconda. Lee Case recalls that a few people shot at them as they rode through town and one man even chased them on his bicycle. A few charged after them on horses and a deputy commandeered a switch train. The deputy was able to overtake them near the Bliss Ranch and fired shots which missed their mark except for a possible wound to one of the horses. The outlaws had two changes of horses waiting for them, one at the Sloan Ranch (8 miles from town) and one at the Silve Ranch. As they galloped off from the Silve Ranch, Butch Cassidy yelled to one of the ranch hands to give the white horse to the kid at the C.S. Ranch.

The three bandits crossed through Lost Soldier Pass into Clover Valley and rode on through Tuscarora with the posse hot on their heels. One newspaper account at the time indicated that the group then doubled back to Paradise Valley where local legend has it they hid out in the hills. There is substantial doubt as to whether this actually occurred since this would have brought them much closer to the scene of the crime and the posse which was returning home after losing their trail.

The three desperados rode on through Idaho to Fort Worth, Wyoming where they were met by two other Wild Bunch members, Ben Kilpatrick and Harvey Logan. The five men used some of their loot to purchase bowlers and three piece suits and then proceeded to have their picture taken thus attired. Butch Cassidy sent the photo to the Winnemucca First National Bank along with a thank you note. The photo hangs today in the bank's present quarters on the corner of Fourth and Melarky Streets.

The second annual "Butch Cassidy Days" was held this year (1982) in Winnemucca to commemorate this event. A parade and reenactment of the event were part of the festivities.

RESEARCH POTENTIAL OF HISTORIC SITES

Until recently, the research potential of historic sites in the Great Basin has been largely overlooked. Donald Hardesty (1978, 1982) has suggested several directions which future investigations of historical sites might take. These focus principally upon the "adaptive processes underlying the expansion of complex civilizations into marginal environments." One problem which merits study is the development of technology necessary for the exploitation of resources--its origin, effect on population growth and habitat, routes of expansion, techniques utilized, and local innovation. Early ranching and mining sites provide the data base for examination of this problem. Population movement and settlement patterns are also reflected in the historical record and studies could indicate which habitats were filled first, provide population size estimates, and discuss the effect of unbalanced sex ratios on social and cultural behavior. For example, predominantly male populations in early mining camps and Chinese and Basque occupation areas may have had an effect on architectural style and on the arrangement of rooms and buildings. Also, historical sites are an important source of information for studies of acculturation. Interaction between whites, Indians, Basques, and Chinese, and other immigrant groups provides data for research of this nature.

Other questions posed by Hardesty include the impact of civilization on a marginal environment, such as the fragile desert ecosystem of the Great Basin. Environmental degradation may be traceable through studies of mining and ranching ventures in the District. Also of interest is the effect of the uncertainty of life in a marginal environment in forcing adaptive change. For instance, maintenance of ethnic identity

may have been adaptive in encouraging economic specialization and thus decreasing competition for scarce resources. The expansion of exchange networks distributing goods from central areas to local consumers, presents yet another research opportunity. The freighting and staging industries in the District possibly could be viewed from this perspective.

Future Research Aids

The Historic Overview narrative and the sources listed concerning each topic should provide a foundation for future historic research. In addition to the sources mentioned within these reports, a number of other research aids are available.

Since many of the following are voluminous, and thus time consuming to review, they are most useful when researching a specific topic, site or incident:

1. County records such as tax, policy, birth, and land title records as well as county commissioner reports and those relating to land and water right disputes. Water district records provide information on irrigation ditches, dams, and reserviors.
2. State records such as the biannual Appendix to the Journals of the Senate and Assembly provide information on mining and agricultural industries as well as on other topics.
3. U.S. Census Records provide a wealth of information on topics such as ethnic make-up of different population centers and occupations, numbers of persons working in different occupations, sizes of farms and ranches, etc. Although all agricultural censuses are available, the general censuses are only made public 72 years after the date they were taken. Reports of livestock and other taxable items, especially in early censuses should be regarded as conservative estimates.
4. Homestead and railroad records. Homestead ownership and dates of settlement can be traced by obtaining patent numbers from BLM Master Title Plats.
5. National archive materials provide a wealth of information.
6. Early cadastral survey and commercial maps. These are very useful in locating early transportation and communication routes, emigrant trails, settlements and other types of historic sites.
7. Early telephone directories and Sanford Fire Insurance Maps. These are useful in determining types, locations, and functions of various buildings in settlements. Newspaper articles and ads can also help establish opening and closing dates of such establishments.
8. Diaries, personal and corporate papers, and other historical documents. Both State Historical Society and "Special Collections" of University of Nevada Reno, have many of the above in their holdings and the Humboldt County Museum also has a few.
9. Newspapers and periodicals are useful for researching all types of historical topics, but should be used in combination with other sources because of a tendency to "embroider" the facts.

The following newspapers are available on microfilm within the Winnemucca District.

HUMBOLDT COUNTY LIBRARY

Humboldt National	August 14 - October 16, 1869
Humboldt Register	January 1866-1876 (incomplete)
Humboldt Standard	February 16 - September 28, 1903
Nevada Mining Record	February and March 1966
Nevada News	January 6, 1900 - March 1901
Peoples Advocate	December 3; 1890 - April 1899
Winnemucca Argent	September 24, 1868
Chafey News	October 1908 - January 1909
Humboldt Bulletin	September 14, 1961 - May 31, 1972
Humboldt Star	January 1906 - October 6, 1967
Humboldt Sun	January 1972 - December 1977
Jumbo Miner	April - July 1908
Mining Topics (Unionville)	December 1921 - July 1922
National Miner	December 1910 - September 1913
Nevada New Era (Lovelock)	1894 - 1895
Nevada News, Golconda	July 1899 - December 1899
Nevada News, Winnemucca	January 1901 - March 1901
The News and Nevada News	January - December 1900
Orovada Weekly Journal	September 1924 - August 1925
The Silver State	February 1875 - July 1925
Paradise Reporter	May 17, 1879 - October 9, 1880 (incomplete)

PERSHING COUNTY LIBRARY

Lovelock Tribune	May 21, 1898 - December 27, 1912
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The Nevada State Historical Society also has copies of Reno and other papers which sometimes contained articles pertaining to the study zone. It also has an ongoing indexing project and a clipping file.

10. Collections. "Special Collections" at the University of Nevada and the Nevada Historical Society in Reno and the Bancroft Library at the University of California at Berkeley are repositories for all types of primary and secondary source material about Winnemucca District photos of events and places in the District.

The Humboldt County Museum in Winnemucca has a small but growing collection of private papers, historic photos, and historical documents. The Museum has recently purchased the Stoker Collections which previously belonged to a private museum in Winnemucca. The collection includes a multitude of historic and prehistoric artifacts from this area, although due to lack of space, very few are currently on public display. Expansions which would accommodate the entire collection are planned for the future however. The Blair Reading Room at the Humboldt County Library in Winnemucca contains mainly published historical sources concerning Humboldt County and Nevada. Pershing County is presently starting a museum in Lovelock. The Pershing County Library in Lovelock also has historic reference materials. Fine interpretive displays of historic artifacts and a growing collection of archival materials are available for public viewing at the Churchill County Museum in Fallon.

11. Oral History. Interviews with long-time residents, including Indians and members of other ethnic groups, represent a rich source of information which has been largely untapped. Many elderly residents of the District have vivid recollection of numerous historical events and topics. Every effort should be made to record this information while it is still available. The University of Nevada at Reno has an Oral History Program and a few of its tape recordings pertain to the Winnemucca District. The Library of Congress/Smithsonian Institute's Paradise Valley Study also included some oral history projects in this area. Oral history projects undertaken in the District in the future should be coordinated with these past projects and programs.
12. BLM Sources. A vast amount of information concerning grazing, water rights, lands, minerals and other topics pertaining to public lands in the District and their management is to be found in Bureau of Land Management documents. Unit Resource Analyses present good summaries of historical and present uses of all the District resources. Many other documents are available as well. A number of films and other educational materials involving historical use of the public lands are available through the Public Affairs Department of the Nevada State Office, Reno.

In addition, the Washington Office of the BLM is currently compiling a history of the Bureau of Land Management and many interesting historical materials have been gathered for this project. Some of these have already been distributed throughout the Bureau. When completed this history will facilitate future research concerning public lands, range management, conservation efforts, etc.

Educational and Interpretive Potential

Historical sites and data for the District have high interpretive and educational value. Various methods and media may be employed to satisfy local and national demands for historical information as well as to educate the public concerning the value of protecting and preserving historical resources:

1. Many historical sites and subjects would be well suited to treatment in a pamphlet series directed toward the public. If funding for such a project were limited it is possible that historic articles could be included in the Humboldt Historian which is published quarterly by the North Central Nevada Historical Society. Information concerning the importance of protecting cultural resource sites could be incorporated into such printed material.
2. Exhibits concerning various historic periods or historic sites could be displayed in cooperation with Humboldt, Pershing or Churchill County Museums or Libraries.
3. Study kits, such as that developed by the Carson City BLM District, can be developed for use in schools. These would employ visual aids and brief description to depict various historical periods, sites, or technical development.
4. Video presentations. The Nevada State Office Public Affairs has video taping equipment and the Winnemucca District has video playback equipment. If funding were available, many historic sites and topics would be suitable for video tape presentations. Video presentations are a highly effective method of communicating historic information.

5. Signing and/or development of historic sites for public visitation are other types of interpretive/educational efforts which can be undertaken. However, problems of protection of cultural resources would have to be dealt with.

Management and Research Recommendations

In general much more attention should be given to identification, field examination, recordation, and research concerning historic sites in the Winnemucca District. Photo-documentation is needed for many sites which have already been recorded in writing.

The most pressing needs are for recording those cultural resources which are most perishable or most threatened by destruction. Thus, recording of oral histories, significant industrial or settlement sites associated with mining, Basque aspen carvings, various aspects of ranch lifeways and technology, as well as any other historic sites in danger of being destroyed, should receive priority treatment in management decisions.

Another area where improvements could be made in cultural resource management would be better coordination between the BLM and other organizations and agencies in pursuing historical research. An example of this would be working more closely with local museums and library humanities programs in research and interpretive efforts.

The following is a topical summary of historical research and field examination needs as well as possible educational and interpretive efforts:

Exploration

Several journal descriptions and government reports concerning the exploration period have been collected but others, such as the notes of the Landers Survey (at the Library of Congress), should be obtained for future reference. Any one or all of the exploring expeditions would be suitable for a public pamphlet including journal excerpts and in some cases, directions for a self-guided tour. An interpretive exhibit on trappers or explorers could be done in cooperation with the local museum.

Emigration

Although the BLM has completed a study of the Applegate-Lassen Trail (Jones 1980), new information has come to light and a follow-up report should be done, utilizing information such as interviews with long-time residents of the Black Rock Desert. Ground surveys should be conducted in sensitive areas such as the trail traces between Rabbit Hole springs and the edge of the Black Rock Desert. And a complete report should be made of the reported remains of a burned wagon train in the eastern portion of the Black Rock Desert.

The Applegate-Lassen Trail would lend itself very well to a video-tape presentation. The contents of early journals and narrative by trail historians and long-time residents could be utilized. Interest in such a project has been expressed by NSO Public Affairs Office (Goodman 1981). Since part of the trail lies in the Susanville BLM District, this could be a cooperative effort. Another treatment of this trail could be in the form of a self-guided tour. A pamphlet could be published for this purpose.

Sensitive areas of the California Trail should also receive field examination. Existing trail traces, significant points and campsites on public lands should be mapped and photographed. More research should be undertaken concerning trading stations along the Humboldt River. There are many emigrant journals relating to this trail and at least some of them should be obtained and compiled. The Emigrant Trail Marking Committee has marked, mapped, and published a descriptive pamphlet which covers the Humboldt, Truckee, and Carson Routes west of Callahan Bridge near Imlay. A similar effort could be made for the portion of the trail east of this point.

Transportation and Communication

There are many roads and communication routes in the District which have not been identified. Early survey, commercial and other maps may be consulted to provide locational data on these. Many of these routes, however, are probably not significant and records research would have to be undertaken to determine which should be recorded.

Field examinations and photo-documentation of railroad and telegraph lines and associated buildings such as stations, section houses, round-houses, and water towers should be undertaken. The old bed of the Central Pacific Railroad and the Overland Telegraph line through the Forty-Mile Desert should receive particular attention.

More information on telegraph lines and stations in the District should be gathered. Also, early telephone lines could be mapped. The effect of the development of modern roads and highways and automobile traffic on the railroad and on economic and social development might be investigated as well.

Political Development

More research could be conducted concerning the role of stockmen and miners in state and local governments, as well as local involvement in national parties. The effect of the large percentages of public lands and the availability of Federal "in lieu of" tax monies on local political development might also be investigated.

Settlement

A large number of settlement sites in the District are unrecorded. BLM site records of historic settlements could be augmented with information from the list of post offices in this report, information on railroad stations and structures, and information from early survey and commercial maps. Homestead sites of special interest could be researched further by obtaining patent numbers. Remains of historic trading posts, stage stations, mining camps, line camps and other settlement sites should be photographed and drawn to scale with priority given to those threatened by possible destruction or deterioration. Architectural style, building materials and methods, and indications of association with particular ethnic groups should be noted.

There are many research opportunities involving architecture, historic settlement patterns, and commercial development. Excavation of suitable examples would provide a wide variety of useful data.

The Humboldt County Museum has expressed an interest in writing histories of the various ranches in the Winnemucca District. This could be done through researching homestead records, title searches and utilizing Bragg (1976) descriptions. A history of a single ranch or mining camp published in the Humboldt Historian or a BLM pamphlet could also be undertaken. A mining camp or line cabin could also be restored for interpretive purposes.

Mining Industry

Very little recording of sites associated with mining, other than some settlement sites, has been undertaken to date. Since new mining activity is causing many old mines to be reopened, it is important that an effort be made to record mining sites in the District (making heavy use of photo-documentation) and to protect, preserve, and interpret significant mining sites. Significance may be determined by importance in local or national history (i.e., association with important events or personages or with the growth of major population centers), by the presence of machinery which represents an important step in the development of technology, by the condition, quality and quantity of physical remains, and by the potential for interpretation). Mill sites with structures intact would generally be considered significant (Edaburn 1981, 1982). Since there are so many historic mines in the District, it is important to refine the above significance criteria so that the most important sites can be identified before new mining activity destroys them. Bowers and Muessig (1982) provides guidance in determining significance which may be useful.

Mining's importance in the historical development of the local area makes it a topic of tremendous public interest. Development of a mine or milling site for public visitation and education could be undertaken, as well as less expensive interpretive efforts such as pamphlets or films. Many oral histories of early mining efforts probably still remain to be recorded.

Agricultural Industry

Research opportunities include documentation and analysis of horse traps, irrigation ditches and systems, dams, fences, haystacks, and technology and artifacts associated with farming, ranching, and mustanging. Research would be most effective if coordinated with similar investigations already undertaken in Paradise Valley by the Library of Congress American Folklife Center and Smithsonian Institute.

Changes in range conditions through time could be evaluated by examining early survey maps which occasionally have vegetation types indicated and by reviewing historic documents such as the botany section of King's survey (See Exploration) and Bragg (1976).

Interviews with elderly buckaroos, sheepmen, cattle ranchers and mustangers could provide much useful information about the development of local agriculture and agricultural technology. Photographs or video tapes of various activities and technology associated with ranching could also be taken or compiled from personal collections and other sources.

Agriculture is highly valued locally as it is an integral part of the regional heritage. Local response to the Library of Congress/Smithsonian "Buckaroos in Paradise" project indicates widespread public interest in this topic. Pamphlets, video presentations, or exhibits concerning this subject would be well received.

Contemporary Cultures

Research opportunities include studies of the role of Native Americans in the local livestock industry, and interaction between whites and Native Americans in Winnemucca, Lovelock, McDermitt and other towns. Relatively few historic data have been collected about the Native Americans in the District. Interviews and recording of crafts, rituals, and present hunting and gathering activities (i.e., pine nut harvests) could be undertaken. Video tape would be one medium which could be used to document these activities. Tapes and pamphlets describing Native American history of the District would aid tribal leaders in their efforts to inform the younger generation of its heritage. Distribution of materials concerning Native American history to schools might also help to reverse negative attitudes towards Indians which are prevalent among Caucasian youth.

Other research opportunities include studies of acculturation. The Chinese community which once existed in Winnemucca could be studied, both through analysis of the artifacts recovered during construction of the Humboldt Library and through interviews with long-time residents. Oral history also would be useful in acquiring more information about other ethnic groups in the District. Historic newspapers can also provide pertinent information. The historical role of Mexicans in the local livestock and farming industries as well as the railroad could be pursued more thoroughly. Basque aspen carvings would be well suited to interpretive presentation using exhibits, slide shows, pamphlets, and/or video tapes and might include interviews with carvers. Rubbings of the carvings and continued photo-documentation are means by which a permanent record of this fragile resource can be made.

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COLLECTIONS

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History of the Winnemucca

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Form 1279-3 (May 1982) (formerly DSC 1279-3a)

